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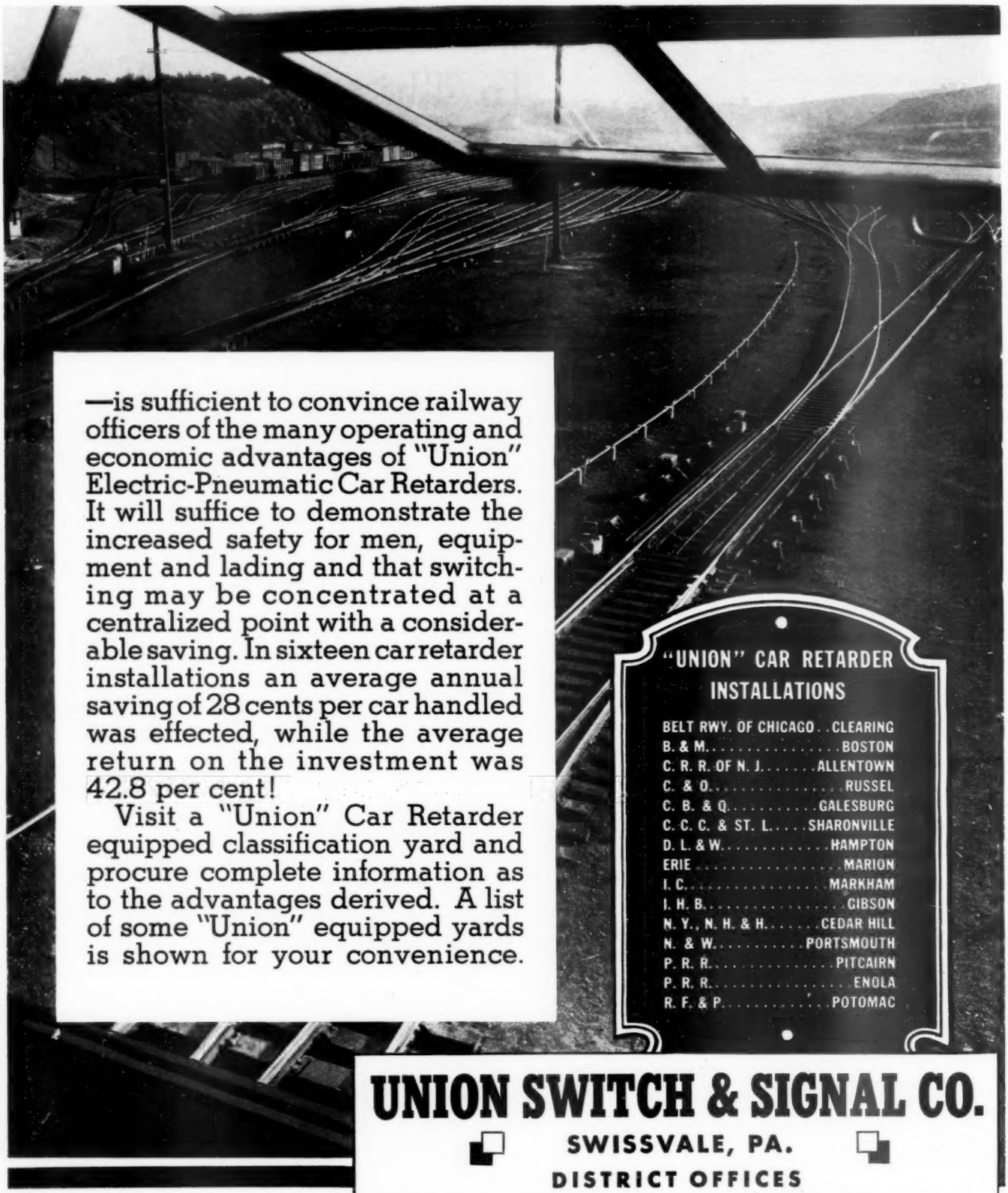
EVEN A GLIMPSE OF A MODERN YARD . .



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RAILWAY AGE

The Labor Leaders New "Plan"

The strategy of the railway labor union leaders is well worth studying, and perhaps even imitating, because it has been so successful. It resembles that of Hitler, who has won more by bluffing than Bismarck won by three wars. The last important strike on the railways, and the only nation-wide railway strike that ever occurred, was the shop employees' strike in 1922. The labor leaders lost it, as the Germans were understood to have lost the Great War. But the labor leaders, à la Hitler, have since succeeded in gaining more by out-maneuvering, out-bluffing and out-bullying railway managements than they ever lost, or ever could have gained, or could gain now, by a strike.

The railways made in 1926 the largest gross earnings in their history and also the largest percentage of return upon investment since the war. It was also in that year that the managements of some railways joined the labor leaders in getting the Railway Labor Act substituted for the labor provisions of the Transportation Act. The gross earnings of the railways in the first seven months of 1938 were 46 per cent less than in the first seven months of 1926. If the gross earnings of an industry so greatly decline and the average hourly wage it pays does not decline but actually increases, there must result a drastic reduction of employment, or bankruptcy of the industry, or both. We are confronted with both. The average hourly railway wage in 1926 was about 64 cents. In 1938 it is about 78 cents, an advance of 22 per cent. Return earned upon investment in the first seven months of 1926 was at an annual rate of 5.06 per cent. In the first seven months of 1938 it was at an annual rate of 0.84 per cent.

Labor leaders who, in the teeth of such declines of gross earnings and return on investment, could get and thus far maintain such an advance in wages, must be conceded, like Hitler, to have a lot on the ball, or to have been dealing with an industry the management of which, like certain governments in Europe, has been willing to pay almost any price for peace. In Europe the price has been paid, not by the nations whose governments have "saved peace," but by Czechoslovakia. In this country it has been paid principally by railway security-owners.

Another Maneuver in Labor Union Strategy

The leaders of eighteen of the labor unions are making a new maneuver. They have had their counsel in the hearings before the emergency fact-finding board appointed by President Roosevelt propose that, in lieu of a reduction of wages, railway managements and labor leaders shall get together and formulate a program for solution of the railroad problem consisting of "coordination of all means of transportation," "financial re-organization of the railways," and some other fine language. No doubt this sounds good to many people. It may sound good even to some railway managements. Almost everybody believes the railroad problem can and should be solved by some kind of a miracle. Their idea of the right kind of miracle is one that will save the railways from government ownership without involving any sacrifice by anybody—excepting, perhaps, railway security-owners. All those having this idea will be hospitable to the suggestion of the labor leaders and their counsel. Most persons believe what they want to believe regardless of plain facts or because they are too lazy to ascertain facts. All such persons will be disposed to accept the labor leaders' new painless plan and the propaganda disseminated in support of it.

It may be worth while, nevertheless, to raise some questions regarding it. Why have they delayed proposing and publicizing it until they could present it to the fact-finding board? We have had a railroad problem for many years. We have had a very acute one for eight years. We have had for about fifteen years increasing competition with the railways by carriers that have not been regulated as the railways have been and that have been subsidized by the government as the railways have not been. After the *Railway Age* had been fighting this competition for some years this paper in 1930 published an editorial criticizing the labor leaders because they had been doing nothing to protect the members of their unions from it, although they were being paid to protect their members' jobs. This was followed in a few months by adoption of resolutions by all the national unions condemning subsidized and unregulated competition; and numerous state associations of railway employees and taxpayers were formed to fight it. What have the heads of the unions really done along this line in the subsequent eight years? Mighty little. As this paper repeatedly has pointed out, they have shown their true principles and policies by giving their political endorsements to public men who have supported their various kinds of proposed make-work legislation absolutely regardless of how these men have voted on proposed legislation affecting the subsidized

and unregulated competition which for so many years has been reducing railway earnings and railway jobs.

The "Era of Good Feeling"

Railway wages were advanced last year. There was subsequently a lot of talk about a "new era of good feeling" and co-operation between railway managements and the labor unions—just as there has been since the complete surrender to Hitler a lot of talk about peace and co-operation in Europe. What has come of all this talk during the last year since railway earnings and employment began making a nose dive? Much less than nothing. It was understood there was to be a "holiday" regarding make-work legislation and that there were to be co-operative negotiations for changes in fantastically expensive working rules and their interpretation. But the labor leaders soon joined in promoting train limit legislation as strongly as they ever promoted any make-work legislation. There have been no negotiations regarding working rules. Referees of the National Adjustment Boards have continued to mulct the railways by upholding racketeering claims of the unions. The labor leaders have opposed any reduction of the highest wages in history in the worst year in railway history, and have disseminated all of the old kinds and some new kinds of lying propaganda to discredit the industry upon which their members depend for employment.

After all that has occurred, the purpose of this latest maneuver of the labor leaders is obvious. It is to mislead the public and the fact-finding board—which can learn very little within thirty days about the railroad industry's real situation and problem—into believing there is a way easily to solve that problem without any reduction of wages. It is good strategy. It may mislead the public and the fact-finding board. It may even afford some railway managements an alibi for consulting their fears rather than the facts, and, like certain statesmen in Europe, displaying their timidity and call it statesmanship.

Mr. Harrison Versus the Facts

But facts are stubborn things. They often influence those who do not believe merely what they want to believe. And there is no fact regarding the present immediate problem of the railroad industry more certain and stubborn than that there is no solution of it that does not include a reduction of wages. George M. Harrison, chairman of the Railway Labor Executives' Association, completely misrepresented the situation in a recent radio address. If he believed the facts would bear stating, why did he not state them? He said: "It is estimated that at the close of this year the railroads should have a profit of more than $700,000,000 after paying all operating expenses. Reports of railway earnings for the month of August show rail profits about the same as August last year. Forecasts for the last four months indicate that car loadings will exceed the similar period of last year. Business levels do not justify a cut in wages."

It has been said there are three kinds of liars—plain liars, d—— liars and statisticians. Mr. Harrison must employ them all to make estimates for him. The word "profits" in its ordinary usage means earnings left after paying operating expenses, taxes and fixed charges. Using the word in this sense, the railway industry had a loss of $181,000,000, or $772 per mile of line in the first six months of 1938; and there is not the remotest chance it will make any profits in 1938. What Mr. Harrison perhaps meant by "profits" is net operating income, which is the amount of earnings left after merely paying operating expenses and taxes. Net operating income in the first eight months of 1938 was $155,000,000. To reach $700,000,000 in the entire year it would have to be $545,000,000 in the last one-third of the year. The railways have never earned that much in the last one-third of any year in their history. The only depression years in the last one-third of which they earned even one-half of it was 1936.

The "Affluent" Railways

Mr. Harrison referred to the affluence of the railways in August. At the same rate of return as in August their net operating income in the last four months of 1938 would be $172,000,000. This would make it $327,000,000 for the year. It will be larger than this if the present slow increase of traffic continues, but in the entire year not much more than half of Mr. Harrison's estimate. In September freight car loadings were 19.4 per cent smaller than in September, 1937. Where, then, did he get an estimate that in the last four months of this year they "will exceed the similar period of last year"? Of such stuff is railway labor union propaganda made, even when disseminated by the supposedly most honest of railway labor leaders. (See *Railway Age* of September 10, page 375, under caption "What Railway Labor Leaders Think of Each Other," for what some other labor leaders say of each others' veracity. The railways will make in 1938 a smaller net operating income than in any preceding year of the depression excepting perhaps 1932. They will probably incur a loss after fixed charges of $140,000,000, the largest of any year of the depression; and this will make the net loss incurred by the industry for its stockholders during the entire seven years since 1931 about $32,000,000.

There can be no solution of the railroad problem under private ownership without government subsidies excepting by means that will convert the industry as a whole from a losing into a profit-earning enterprise. There is no way to convert it into a profit-earning enterprise excepting by widening the margin between its gross earnings, on the one hand, and its operating expenses and taxes, on the other hand,—i.e., by increasing its net operating income.

Do the labor leaders in their new plan propose definite means of accomplishing that? Not according to any information that has reached us. The best means for all concerned would be increase of traffic and gross earnings. That railway freight has never recovered to the pre-depression level, and in September was 43 per cent smaller than it averaged in the five years 1925-1929, has been principally due to the economic policies of the New Deal which have prevented revival of production and construction by the industries providing traffic. Labor leaders do not propose any changes in these policies. On the contrary, they have advocated and still defend them, although no economist of any reputation whatever among economists, and almost no business man, believes there can ever be a full revival of construction, production and traffic as long as these policies are continued.

What Do the Labor Leaders Propose?

What policies, then, do the labor leaders propose that they and railway managements shall agree upon for rehabilitation of the railway industry? The only definite suggestion offered by them is for "financial reorganization" of the railroads. The obvious and avowed purpose of that is not to increase net operating income, but to reduce the amount of it that must be earned for investors on the assumption that this will increase the amount that can be paid to labor. The labor leaders have succeeded, through advances in wages, in appropriating for a greatly reduced number of employees all the benefits of the increased efficiency resulting from investment; and now they ask railway managements to unite with them in finally and completely despoiling those who have made the investment. Disregarding the fact that this is an invitation for the managements to commit an act of perfidy and dishonor, it should, perhaps, be emphasized again that the managements have no power to agree with the labor leaders or anybody else upon financial reorganizations. The managements can agree to establish and maintain wages necessitating financial reorganization, but at that point their authority ends. What and how drastic financial reorganizations shall be made are legally determinable by security-owners and the courts.

Why Not an Agreement Regarding "Make-Work" Legislation?

Perhaps the labor leaders contemplate agreements by them and the managements to advance rates. But obviously any such agreement to which the traveling and shipping public and the Interstate Commerce Commission did not subscribe would be valueless. Do they propose an agreement in behalf of legislation to improve the rate-making provisions of the Interstate Commerce Act by assuring the railways a "fair return"? The labor leaders have much influence with the President and Congress; but they would soon find that the shipping public, especially the farmers, also could exert great influence in Washington apropos a combination of labor leaders and railway managers in behalf of legislation to enable the railways to earn a "fair return" during depression in spite of the highest wages in history.

Perhaps they contemplate an agreement by railway management and labor to promote legislation reducing the subsidies and increasing the regulation of competing carriers. That would be in the interest of the railways, their employees and the public. But why not also an agreement that the labor unions will quit promoting "make-work" legislation to reduce the efficiency and increase the cost of railway operation? That also would be in the interest of the railways, most of their employees and the public. But could the eighteen unions represented by Mr. Harrison and his counsel get Brother Whitney, president of the Brotherhood of Railroad Trainmen, to join in such an agreement? We fear not. Brother Whitney repeatedly within the last few years has denounced Brother Harrison as a traitor to organized labor because Brother Harrison has ostensibly tried to co-operate with railway managements for a solution of the railroad problem. Imagine, then, what Brother Whitney would say and do if Brother Harrison really did co-operate.

Government Subsidies to Maintain Wages?

There is one remaining matter regarding which railway managements and the labor leaders might agree. They might agree to demand that, in order to enable the railways to maintain the highest wages in history and carry on under private ownership, they should be subsidized from the public treasury as their competitors by water and highway are already. On the basis of prospective traffic and gross earnings under New Deal policies this is the only means by which most railroads can be saved from bankruptcy without a reduction of wages. President Roosevelt once publicly expressed his opposition to a reduction of wages. He later expressed opposition to Mr. Harrison's proposal of railway subsidies. His fact-finding board consists of intelligent and able men. But if their economic philosophy or the views already expressed by the President should cause them to find against a substantial reduction of wages they should answer the vitally important question, "What will happen to the railway industry if there is not a reduction of wages and it is not given subsidies?"

The *Railway Age* is opposed to subsidies for any means of transportation or any kind of business. But the *Railway Age* claims that it knows as much about the railway industry of the United States, its present condition and problem as anybody; and we are unable to conceive of any solution of the present railroad problem under private ownership that does not include either a reduction of wages or subsidies to the railroads from the public treasury. To pay subsidies at

the expense of the general taxpayer to enable the railways to maintain present wages would be, in our opinion, economically indefensible; but it would be no more economically and morally indefensible than for the government to demand maintenance of present wage schedules.

A Problem that Defies Miraculous Solution

What is this new plan of the labor leaders for solution of the railroad problem without a reduction of wages? They have not, and cannot have, any such plan that is of the slightest value. Their announcement is merely a red herring intended to divert attention from the real problem—simply a new move in their amazingly successful à la Hitler strategy. We can evade vitally important facts, but they will still exist and control our destinies. It is a vitally important and incontrovertible fact that no great industry can long be kept under private ownership if it is neither subsidized enough nor able to maintain enough margin between its gross earnings, on the one hand, and its operating expenses and taxes, on the other hand, to enable it to raise and invest the capital that it must raise and invest in order to carry on. The time has come, if private ownership of railways is to be preserved, when we must quit looking for miraculous solutions of the railroad problem that will not, even temporarily, cost anybody anything. It can be solved only by travelers, shippers, employees and security-owners making the sacrifices necessary to solve it. If each of them does not make some sacrifice, they will all make the greatest sacrifice—that of forcing government ownership on themselves and the American people.

Emergency Board's Hearings

Big send-off for sessions expected to continue until October 17 on six-hour day, six-day week schedule

WASHINGTON, D. C.

RATING much of that fanfare which has come into fashion since all publicity mediums began covering "good" stories, the Emergency Board hearings on the railroad wage controversy got under way in Washington, D. C., on September 30. Members of the board, who will make their report to President Roosevelt within 30 days from the date of their appointment (September 27) are: Chairman—Walter P. Stacy, chief justice of the Supreme Court of North Carolina; H. A. Millis, retired chairman of the University of Chicago's department of economics; and James M. Landis, dean of Harvard Law School.

Some 300 persons were on hand for the premiere session, including a large turnout of railway executives and labor leaders, numerous reporters, newspaper cameramen and newsreel photographers. Only the radio was absent; but then George M. Harrison, chairman of the Railway Labor Executives' Association, and Herbert A. Enochs, chairman of the Carriers' Joint Conference Committee, had spoken their respective pieces over the air earlier in the week.

Harrison and Enochs Perform for Newsreels

During the first half hour or so on the opening day the photographers' bulbs flashed in rapid succession as the board and the principal representatives of the contending parties were "shot" from various angles. Most of the cameramen, however, missed one "picture-worthy" pose when they failed to snap Mr. Enochs as he walked over and shook hands with Mr. Harrison. The photographers begged for a re-enactment, but Messrs. Harrison and Enochs seemingly had become a bit shy—the best they would give was an "intimate-conversation" pose. The newsreel men had their innings during the noon recess when Messrs. Harrison and Enochs made brief statements for the motion picture audiences. Mr. Harrison got in a word for labor's favorite annual-wage figure of $1,115; but Mr. Enochs, approaching the microphone, said that he would not, with the few words allotted to him, attempt to answer "George" on that one. He made a general statement to the effect that the railroads welcomed the Emergency-Board investigation of their case on its merits.

Meanwhile, the Railway Labor Executives' Association's "extra-curricular" publicity activities have been set up in the form of Friday-evening press conferences, beginning October 7 and continuing "on succeeding Friday nights while the present negotiations continue." These press conferences are to be held at the Hamilton Hotel, Washington, where R. L. E. A. will also entertain newspapermen at a dinner on Monday evening, October 10. The announcement said that an hour had been set aside for the first press conference "so that news correspondents may have the benefit of a thorough discussion of issues and developments in the railroad wage controversy with union representatives."

The morning session of the hearing's first day covered the usual discussions of procedure and the opening statement of J. Carter Fort, general solicitor of the Association of American Railroads, who is in charge of the carriers' presentation in support of their proposal to reduce wages 15 per cent. Mr. Fort was followed in turn by Judge Charles M. Hay of St. Louis, Mo., counsel for the 18 unions presenting their case through the Railway Labor Executives' Association, and Tom Davis of Minneapolis, Minn., counsel for the non-affiliated Brotherhood of Railroad Trainmen, which is conducting its own case. At the close of the first day's sessions Chairman Stacy revealed the tentative plan of the board to conclude hearings not later than October 17. In order to protect that deadline, while meeting the requests of the parties for time to make their presentations, he went on, it is necessary for the board to sit six hours a day, six days

a week. The hours are: 9:30 a. m. to 12:30 p. m., and 2 p. m. to 5 p. m.

Judge Stacy opened the hearing with a reading of the President's proclamation, continuing to suggest that the parties agree among themselves as to procedure, since the board's only purpose was to try to ascertain the facts—it desired "to get the full picture," and "it won't make much difference how the picture is painted." Mr. Fort then outlined the tentative agreement among counsel that the railroads would introduce the testimony of their witnesses after all parties had made their opening statements. He asked, however, that all cross-examination of carrier witnesses follow immediately upon such witness' direct testimony. Here came some discussion as to procedure for the separate cross-examinations by Judge Hay and B. of R. T. Counsel Davis; but it ended when Chairman Stacy observed that so far as the Board is concerned there was only one emergency—the wage controversy.

R. L. E. A. and B. of R. T. Positions the Same

Further references to the separate labor presentations came when Mr. Landis asked Mr. Davis if the B. of R. T.'s independent action meant that its position was in any important respect different from that of the 18 cooperating organizations. Mr. Davis replied that the positions in the wage case were in substance the same—the separate presentations were due "to some difference of opinion among the men." There was also some talk of the absence of the American Train Dispatchers' Association and the Order of Sleeping Car Conductors. J. G. Luhrsen, executive secretary-treasurer of R. L. E. A., who is on leave of absence from the presidency of the Train Dispatchers' Association, explained that although the dispatchers got no increase last year, the 15 per cent wage-cut notices were served upon them. The carriers, however, did not suggest that they join the national conferences; and the dispatchers have answered the reduction notices with a demand for a 10 per cent pay increase. The case is still pending on the individual roads, as is that of all employees of the few Class I roads which did not take part in the national conferences. Mr. Harrison explained that in most of the latter instances there was an agreement to be governed by the outcome of the national proceeding; thus, he added, it might be said that all Class I roads have a wage question before the board. Explaining the failure to serve notices on members of the Order of Sleeping Car Conductors, Mr. Fort said that contracts with that organization had not expired when the wage-cut move was initiated.

Mr. Landis asked more questions than the other board members, although Chairman Stacy broke in here and there—once to ask Judge Hay if he cared to go into the refusal of the unions to submit the controversy to arbitration. Judge Hay didn't think he had anything to say on that point; and when Mr. Fort asked "What could he say?" Mr. Harrison broke in to point out that the matter of agreeing to arbitrate was voluntary, and the railroads had often refused in the past to thus resolve controversies. This time, the R. L. E. A. chairman went on, labor availed itself of its privileges, the primary reason being what they regarded as the failure of the carriers to make any showing in the conferences—"therefore, we had nothing to arbitrate."

Unions Created Emergency, Says Fort

Not many things which are new were said by counsel and witnesses as the railroads proceeded to retell the story of the industry's plight, and as the union lawyers, in opening statements and in cross-examination, sought to locate the causes and possible remedies for such distress in places other than the present wage scale. In his opening statement Mr. Fort placed the responsibility for the creation of the Emergency Board upon the shoulders of the railway unions. In explanation of this statement, he pointed out how the law provides methods for "an orderly, peaceable and fair settlement of railroad wage disputes." The railroads, he stated, have followed strictly both the letter and the spirit of the law. "But," continued Mr. Fort, "immediately after wage reduction notices were served on May 12, responsible leaders of railroad labor organizations publicly announced that they would agree to no reduction of wages, thus nullifying in advance the effectiveness of the methods of conference and mediation provided by law. They prejudged the case in their own favor before there was any opportunity to present facts and arguments. Under such circumstances, it could hardly be hoped that conference or mediation would result in settlement."

Dealing next with the unions' refusal to arbitrate, although arbitration had been accepted by the carriers, the A. A. R. general solicitor said that "the representatives of the employees did not enter this situation with open minds. They will, I assume, explain to you why they took a strike vote instead of agreeing to submit this dispute to an arbitration board with authority to render a binding decision. If their action was not dictated by lack of confidence in their cause, let them tell you what did dictate it." Stating that an Emergency Board is not a second Mediation Board, with a primary duty of bringing about a settlement through compromise, or give and take, Mr. Fort pointed out that the duty of this board is to deal with the merits of the controversy. The question at issue, he added, is: "Under all the circumstances, is the proposed wage reduction just and reasonable?"

Before discussing in detail the evidence to be presented by the railroads, Mr. Fort told the board that the present question involves the general level of railroad wages; that time limitations alone make it impossible to deal with the wages of individual employees or groups of employees, and that, "if it were not possible to deal with the general level and with all employees alike, a board of this kind would be reduced to administrative paralysis."

He summarized the railroad evidence as being designed to show: "That the railroad industry is now in a critical and desperate financial condition, with business running about 20 per cent lower than last year; in contrast, the railroad employees who are still on the payrolls are receiving the most liberal wages in history; but 250,000 railroad employees have lost their jobs in the last year partly because of the inability of the railroads to pay them; railroad employees are now receiving higher average earnings than employees generally—they constitute a group which is fortunately placed in the economic scale, in spite of the fact that the industry from which they obtain their living has reached a low ebb."

Not a "Tin-Cup" Case

"This is not a tin-cup case," Mr. Fort went on. "We are asking for a reduction because the general level of railroad wages is unreasonably high in the light of existing conditions which bear upon the question of what is a reasonable level of wages. These conditions include, as a most important factor, the desperate financial condition of the railroad industry, and include, also, the cost of living, general economic conditions and the situation with respect to other employees and citizens generally. The point is that *there is no such thing as a reasonable*

level of wages which exists apart, as a thing suspended in thin air. The reasonableness of a wage level can be determined only in the light of conditions existing at any given time. The fact that a wage level is just and reasonable at one time is no indication that it is just and reasonable at another time when wholly different conditions prevail.

"Repeatedly, in the past, rail wages have been raised because living costs have gone up, or because of improvement in the railroads' situation, or because of a bettered economic situation generally. It is a poor rule which does not work both ways. In fact, it is an impracticable rule, impossible of application. It is flying into the teeth of economic law to say that wages should be raised by reason of favorable conditions to a point made possible only by favorable conditions and should fail to respond to unfavorable conditions. It is an attempt to deny the philosophy of arithmetic. Payrolls cannot be met when there is no money to meet them.

"Where does the interest of railroad employees lie in this situation? Is it to their interest to have their industry burdened with a wage level it cannot carry? If the railroads do not meet the new competition with which they are now faced, their business will be lost, and they will be able to offer less and less employment opportunity. There will be further abandonment of mileage, fewer trains, more closed stations. *The interest of the men lies in the preservation of their industry. More people will be employed, if wages are reduced, than there will be if present wage scales are maintained.*

"Restoration of the railroad industry to health would be a powerful aid to national recovery. The railroads are ordinarily tremendous buyers of a multitude of goods and commodities, some 70,000 in number, which are produced in every part of the country. They thus furnish, indirectly, employment to hundreds of thousands of workers in other industries. When a key industry of this kind is facing disaster, it cannot aid national recovery."

Mr. Fort also referred to the rate-increase method of meeting present conditions, but only to dismiss it with the assertion that the carriers have exhausted for the time being that source of relief. The Railroad Retirement Board's compilation from which the labor organizations got the $1,115 annual wage figure was characterized by Mr. Fort as a study which neither shows low earnings nor reflects fairly any condition of unemployment. He explained (as has been pointed out in previous issues of *Railway Age*) that the compilation covered all persons who received any pay from any railroad during 1937, including casual workers looking to other fields for their livelihood.

Labor Regards Present Wages "Inadequate"

Following Mr. Fort, Judge Hay got off with the assertion that there has never been any contention by the carriers that the wage level was too high. Thus, if, as Mr. Fort said, this is not a "tin-cup" proceeding, the R. L. E. A. counsel thinks the "tin cup" must have been abandoned very recently. He went on to express the hope that from the hearings would come a "flood of light on the real problems of the railroads" so that management and labor could go forth on a constructive program. After next stating the position of labor to be one holding that present wages are "in fact inadequate compensation for the services rendered," Judge Hay spent considerable time discussing the Retirement Board's compilation from whence came the above-mentioned $1,115 average 1937 wage. His view was that the railroad industry needs today not a wage cut but "a comprehensive plan for the proper regulation and correlation of all forms of transportation, the correction of financial abuses and a thorough program of reorganizations." He thought it a "pity" that the wage controversy couldn't end that day so management and labor could get to work on such a program. Much of the remainder of Judge Hay's statement was a discussion of the case along the lines followed in the R. L. E. A. pamphlet entitled "The Wages of Railroad Labor, 1938" which was reviewed in the *Railway Age* of October 1, page 486.

It was B. of R. T. Counsel Davis who grabbed most of last week-end's headlines with his charges that the railroads—the "most mendacious beggars the world has ever known"—were not acting in good faith; that they would be "very happy" if they could get a one per cent cut and thereby break down the basic wage structure by obtaining recognition of the "ability-to-pay" doctrine. Picturesque with his long hair and frock coat, Mr. Davis was easily the orator of the occasion. It was his position that no industry has the right to exist that does not pay its workers a living wage. Incidentally he revealed that 98.2 per cent of the B. of R. T. members voted in favor of the strike, while "960,000 out of a million" in the other 18 organizations also favored a walkout.

Mr. Davis hoped that the board would not follow the "bad example" which the railroads "want to give the country;" he hoped it would read the 1932 wage-deduction agreement to see where "the door was left open to put more men out of work." Before that agreement was one year old, he asserted, it "wasn't worth the paper it was written on." And to him the conclusion is "unavoidable" that this deduction did not help the railroads. Next Mr. Davis submitted an A. A. R. advertisement, which he said set forth in "better language" than he could "the proposition we're contending for," i.e., how railway wages create purchasing power, sending money 'round and 'round.

Cites Increases in Executive Salaries

The wage-cut demand, Mr. Davis called an "untimely" one, indicating a lack of disposition to co-operate with the Administration. Meanwhile, he charged, salaries of railroad officers have been increased by from 5.5 per cent to 105 per cent. As a "most glaring" example he singled out the Chicago & North Western, which, he said, had 16 officers earning $10,000 a year or more in 1935; in 1937, "in bankruptcy and wanting to cut wages," he went on, it had 32 officers in the $10,000-a-year class. These $10,000-a-year C. & N. W. men, Mr. Davis calculated, got a total of $270,000 in 1935—$531,000 in 1937. Also, Mr. Davis found the record of the Pennsylvania "particularly interesting." As he recited that record, 72 P. R. R. officers have recently had salary increases—all of 15 per cent or more, and one of 66⅔ per cent. The latter, he went on, was received by the P. R. R. president, who was getting $60,000 a year—"not a living wage"—but who now gets $100,000—"barely a living wage."

Mr. Davis also proposed to show that one road—the Duluth, Missabe & Northern—paid 111 per cent in dividends in 1936; and that the Chesapeake & Ohio dividends in that year exceeded its payroll by more than one-half million dollars. Paying his respects to the "railroad lobby" Mr. Davis asserted that the A. A. R. vice-president and general counsel's plans once contemplated the selection of 100 men in each congressional district for the purpose of having them undertake to see that congressmen "understood things." He closed with a quotation from a recent address by President Roosevelt whom he called "one of the greatest liberals and greatest

humanitarians of this day;" and with a characterization of the wage-cut proposal as "an insolent offense to delay recovery."

Mr. Landis asked Mr. Davis about allowances for expenses incurred by trainmen during lay-overs at away-from-home terminals. The reply that there was no specific allowance for such expenses (only pay for lay-over time over and above 16 hours) brought forth considerable discussion of the matter. One of the labor representatives on the sidelines said that such expenses incurred by the average engineer amounted to about $360 a year. Mr. Davis put the cost to the brakeman at $30 a month; and calculated that this brought the average brakeman's net monthly pay down from $140 to $110. He added that a 15 per cent cut off the $140 would make the net $89 a month. Mr. Fort's suggestion that the railroads provide some facilities for men laying over at away-from-home terminals brought forth from the labor ranks an assertion that engineers stay at "good, reputable hotels." The discussion ended when Mr. Davis countered with a facetious expression of hope that this statement did not imply that trainmen sought any different type of lodgings.

Dr. Parmelee Testifies

Before introducing the first railroad witness—Dr. Julius H. Parmelee, director of the Bureau of Railway Economics—Mr. Fort offered as an exhibit the President's railroad message to the last congress and the accompanying documents, including the report of the Splawn-Eastman-Mahaffie committee and various comments thereon from other members of last Spring's White House railroad conference. Dr. Parmelee introduced 26 exhibits as he proceeded in his endeavor to show that "Impoverished railroads cannot provide the efficient, dependable transportation so essential to commerce and the national defense." Because of the continued seriousness of the depression of 1938, on top of a succession of seven lean years of reduced traffic and inadequate earnings, the railroads face a financial crisis, the witness told the board. Thirty per cent of the country's rail mileage is in the hands of receivers or trustees, and other railway companies are in financial difficulty, he stated. "During the first eight months of 1938," Dr. Parmelee continued, "total operating revenues were smaller by 20 per cent than in the same period of 1937, while net railway operating income decreased 62 per cent. The carriers this year, during those same eight months, failed to earn their interest and other fixed charges by $182,000,000, whereas in the corresponding months of 1937 they earned, over and above fixed charges, a net income of $61,000,000."

Dr. Parmelee called attention to the fact that the rate of return on investment (on an annual basis) during the first eight months of this year averaged less than one per cent. This was a marked decline from the 2.56 per cent earned in the corresponding period of 1937. "In short," he commented, "indications are that the financial results of railway operation for the year 1938 will be even lower than the results of 1932 and 1933, when the economic depression hit bottom." He also called the board's attention to the Splawn report's statement that costs are on a higher level in 1938 than in 1937, and that "the chief item of increased cost is the higher level of wages and salaries."

"The trend of carloadings in the last few weeks does not indicate definite improvement for the future," the Bureau of Railway Economics' head said. "Even with a small increase in freight and passenger rates, operating revenues have been, and apparently for some time to come will continue to be, wholly insufficient in the light of present operating costs, including wages."

Railroads, Dr. Parmelee went on, must hold their operating costs within reasonable limits if they are to continue to meet the transportation demands of American commerce. Improvement in railway plant must go on, he said, adding that "the industry will continue to need a large input of new capital each year to keep it abreast of modern conditions and demands." To obtain this necessary capital, he stated, the railroads "must regain the financial credit position they have now lost."

This loss of credit is not due to overcapitalization on the part of the railway industry as a whole, the witness said, adding, in explanation, that "railway funded debt and interest charges have not increased in relation to the size of the railway plant, nor have they increased in relation to railway revenues; but over a long period have decreased, both actually and relatively." He also said that "dividend payments have been moderate in the past, and in recent years, have declined to very low levels."

"Holders of railway securities have, since 1930, lost far more, in terms of the reduced value of their holdings, than they have received in interest or in dividends during that period," Dr. Parmelee pointed out. During the years 1930 to 1938, the aggregate net loss to railway bondholders and stockholders combined, over and above the interest and dividends they received, amounted to $5,455,000,000, according to exhibits he submitted. One exhibit showed that railroad purchases of materials and supplies for the 15-year period from 1923 to 1937 totaled $15,637,000,000—an average of more than a billion dollars a year. "Unfortunately, railway purchases and capital expenditures have declined greatly, and have returned to the levels of 1932 and 1933," Dr. Parmelee declared. This, he explained, is the result of "the desperate financial stringency confronting the carriers."

Opening cross-examination of Dr. Parmelee was conducted by Judge Hay who was prompted by R. L. E. A. Chairman Harrison. There was much talk of the source of the funds invested in the railroad industry since 1920; but more of what is reflected in the investment account. Dean Landis was particularly interested in the latter—he wanted to know if there was any figure which showed "this thing called investment," as he used the term, i.e., to mean the amount of money that has been contributed to the railroad industry. Dr. Parmelee thought the investment account's total would not be far away from such a figure, explaining that the Interstate Commerce Commission has had control of railroad accounting for 30 years, during which time, in the witness' opinion, much of the property must have been written out of the books and new property written in in accordance with the accounting regulations. Judge Stacy suggested that one difficulty which the foregoing discussion encountered was due to the fact that the I. C. C. accounting rules were not at hand; and he asked if there weren't "some ambiguity" in such rules. Dr. Parmelee replied in the negative, adding that the accounting regulations were very carefully worked out.

Suggests Market-Value Basis for Calculating Return

Resuming his cross-examination, Judge Hay asked if it could be ascertained what present holders had invested in railroad securities. He went on to assert that the railroads are seeking a return on the face value of their outstanding securities, adding the suggestion that the 1937 net was "a fair return" when applied to that year's market values. Dr. Parmelee didn't know, and Judge Hay said "we'll figure it out for you—we'll help you."

"You have helped us considerably," Mr. Fort interjected.

"The Lord knows you need help," was Judge Hay's come-back.

As Judge Hay calculated it a buyer of the railroad industry would have paid $8,800,000,000 for its outstanding securities on August 1, 1938; and the 1937 interest and dividends totaled $520,000,000. Thus a return of about 5.8 per cent. But Dr. Parmelee pointed out that many railroad securities are held by institutional investors who have not been buying in recent years, and who are now caught with those bought in the past. Later on, Mr. Landis requested data for past years on railroad securities held by institutional investors; also, the figures at which those holders carried such investments. Dr. Parmelee had with him some data along those lines which had been compiled by others. As the witness offered such data Judge Stacy suggested that a railroad's liability is determined by the face value of its securities—not the market value.

Meanwhile Judge Hay had turned to the Parmelee exhibits of carloading index numbers and of actual carloading figures, pointing to instances wherein the index was high with actual loadings lower than in months having a lower index number. Dr. Parmelee said such citations did not disturb him "in the least" as he went on to explain that actual loadings of different months in the same year are not comparable without adjustments for seasonal variations.

Who Wrote the "Little Gray Book"?

Referring to management's wage pamphlet entitled, "Railroads and Railroad Wages, 1938," as "the little gray book," Judge Hay accused Dr. Parmelee of the authorship. The witness denied the allegation, and for this Judge Hay "loved" him "all the more." The R. L. E. A. counsel then suggested facetiously that Mr. Fort must have written the booklet, as Judge Hay knew of no other who could "lie like that." Mr. Fort, too, denied the authorship, although he said he would have been proud to have written the pamphlet. "Then there's no infamy you wouldn't be proud of," said the labor lawyer. And Mr. Fort came back to predict that the railroads would have something to say when "we get around to 'the little yellow book'," his reference being to the above-mentioned R. L. E. A. wage pamphlet, which Judge Hay promptly denied was "yellow"—it is "buff."

Returning to his cross-examination of Dr. Parmelee, Judge Hay asked: "Do you know if you got $250,000,000 from us what the railroads would do with it?" The witness thought the question was one for a responsible railroad executive to answer, although he did suggest such possible uses as paying bills, increasing purchases and employing more men to do necessary work. When Judge Hay went on to suggest that in such a set-up none of the money would be left for fixed charges, Mr. Fort asked the labor counsel if he favored repudiation of debt. Judge Hay's answer was that he favored "a lot of these boys who have been out of jobs getting what they're entitled to." B. of R. T. Counsel Davis asked Dr. Parmelee only a few questions to bring out the fact that the witness did not mean to imply in one of his exhibits that all railroads are undermaintained.

The second railroad witness was A. F. Cleveland, vice-president of the A. A. R. in charge of its traffic department, who discussed a series of exhibits designed to show how the depression, changes in industrial practices and the competition of other transport agencies have had an adverse effect on railroad traffic. "Railroad jobs," he said, "will be fewer if the rail carriers are not able to obtain their proper share of the nation's commercial traffic—less business means less revenue, and a decline in income necessitates a reduction in employment. It is, therefore, important that the railroads be in a position to go after the traffic which they are best equipped to handle."

Mr. Cleveland reminded the board that "the railroad industry is no longer even a semi-monopoly," adding that "if the railroads are to continue filling the transportation needs of the nation's commerce, if they are to be able to go after business on equal terms with their competitors, then they must not be weighted down with unduly heavy operating expenses."

Rate Increases No Source of Relief

It was Mr. Cleveland's opinion that possible rate increases offered no hope for relief. Elaborating, he said that it is not possible under existing laws, policies of regulatory bodies and particularly in the face of competition to secure rates to offset large increases in expenses. And "if the railroad costs are such that they cannot meet the rates of their competitors, there will be less traffic to haul and there will be fewer and fewer railroad jobs."

Opening his cross-examination, Judge Hay asked if all classes of railroad workers did not solicit business for their respective roads; and Mr. Cleveland agreed that such was the case. That, Mr. Hay went on, is what you call "work done and not paid for." The crack brought a laugh, but General Solicitor W. T. Faricy of the Chicago & North Western, who had conducted Mr. Cleveland's direct examination, objected to the "new unit" going into the record. Mr. Faricy said he knew that Judge Hay had spoken facetiously, but he nevertheless suggested the possibility of confusion with the I. C. C. unit of "time paid for and not worked." "Smiles do not always show on the record," he added; and Judge Hay offered to put his picture in the record. When the R. L. E. A. counsel later suggested that the maintenance of wage scales would make for contentment and loyalty, Mr. Fort told him that if he thought "the men won't render loyal service under wage rates fixed by an impartial board, then you know less about your clients than we do." Judge Hay replied that he thought the men were entitled to a "fair wage"; and Mr. Fort agreed, adding that the railroads wanted to pay such a wage.

After a few questions on railroad investments in bus and truck companies, B. of R. T. Counsel Davis, who is being assisted by a former member of the staff of Senator Wheeler's committee investigating railway finances, turned to the bankrupt roads in the Middle West, asking if the plight of such carriers were not due in large measure to inadequate divisions of rates and high refrigerator-car rentals. These questions, as noted in recent issues of *Railway Age*, have previously come to the fore in testimony before the Wheeler committee, in the Ex Parte 123 rate-increase case, and most recently in petitions filed with the I. C. C. by trustees of the Chicago Great Western. This cross-examination provided an exciting few minutes, as Mr. Davis sought to resurrect opinions on the divisions which Mr. Cleveland had held when he was associated with the C. & N. W.

The witness explained that the I. C. C. did not agree with the position taken by him as a C. & N. W. officer, and Judge Stacy did not see what good it would do the board to know whether or not Mr. Cleveland now differed with the I. C. C. findings on the divisions matter. Mr. Davis suggested that there is "no sanctity" in a finding of the I. C. C.; but Mr. Fort had found "so much sanctity that we have to do what they say." Fin-

ally, Mr. Cleveland said that in the case under discussion he first took the position that divisions to the C. & N. W. were unfair; later there was a compromise which he helped to make. It was the divisions based on this compromise which later came before the I. C. C. and were upheld.

Dean Landis asked the witness a few questions to get Mr. Cleveland's opinion as to the outlook for the future of the railroad industry. Mr. Cleveland replied that he wouldn't want to say that devices of a practical nature aren't going to develop to make branch lines profitable—but they have not yet. In general Mr. Cleveland thinks that the railroad industry is going to prosper when (and he knows sometime it is coming) its competitors are placed on an equality with the railroads. Meanwhile, he added, the carriers could get a lot more business now if they could cut their costs.

Mr. Cleveland was followed by J. Elmer Monroe, statistician of the Bureau of Railway Economics, who presented testimony on average wages, including a criticism of labor's use of the Retirement Board study to obtain the annual wage figure of $1,115. Mr. Monroe's discussion of the latter was along lines of that appearing in the *Railway Age* of September 24, page 452.

The testimony of this witness also showed that average hourly earnings of railroad employees reached an all-time high in the first half of 1938. Starting with the year 1916, when earnings per employee hour averaged 27.5 cents, Mr. Monroe traced the course of these earnings through their rapid rise during the war and post-war periods, to an average of 66.6 cents in 1920. Reductions then occurred, the witness stated, until 1923, when the average employee received 60 cents per hour actually worked or held for work.

An upward movement started in 1924 and continued through 1931, when employee earnings averaged 68.4 cents per hour, according to Mr. Monroe's exhibits. This figure then fell, because of the 10 per cent wage deduction voluntarily accepted by the employees, to an average of 62.6 cents per hour in 1933. With the gradual elimination of this deduction in 1934 and 1935 and the wage increases granted in the Summer and Fall of last year, employee earnings per hour, Mr. Monroe stated, rose to 63.5 cents in 1934, to 68.8 cents in 1935, to 69.6 cents in 1936, to 71.6 cents in 1937, and to 75.9 cents in the first six months of 1938, the highest figure ever reached.

Peak Hourly Earnings With Return Less Than One Per Cent

While employee average hourly earnings now stand at their peak, the rate of return earned on the investment which makes their jobs possible is now amounting, on an annual basis, to but two-thirds of one per cent, the witness testified. The trend of average hourly wages has been almost steadily upward, while the trend of return upon investment has been almost steadily downward, Mr. Monroe said. His exhibits showed that this return upon investment amounted to 5.90 per cent in 1916, fell to 2.81 per cent in 1921, rose to a post-war peak of 4.96 per cent in 1926, dropped to 1.24 per cent in 1932, and amounted to two-thirds of one per cent, on an annual basis, in the first half of 1938.

"In other words," said Mr. Monroe, "while, in the first six months of 1938, average hourly earnings of the employees included in these proceedings showed an increase of 154 per cent over the period 1916-1917, the rate of return earned on property investment showed a decrease of 88 per cent in this same period."

Cross-examination of Mr. Monroe was brief. Judge Hay brought out the fact that there are no figures to show the number of skilled workers, such as trainmen, who had work in only a few months. Mr. Monroe, whom Judge Hay called "one of the most intelligent witnesses we've had on the stand," did not think there were many skilled railroaders in such a position. After a couple of questions from Dean Landis and one from B. of R. T. Counsel Davis, Mr. Monroe relinquished the witness chair to the next railroad witness—Dr. Willford I. King, professor of economics in New York University's School of Commerce.

Dr. King's studies showed that a 37 per cent increase has occurred since 1929 in the average wages of railway employees, when measured in terms of buying power. Since 1929, he said, average hourly earnings of railroad men have increased by 15 per cent, while the cost of living his fallen, in this same period, by 16 per cent. In consequence, he continued, a railroad man's pay for one hour will now buy 37 per cent more than did an hour's pay in 1929.

"While hourly 'money' wages fell materially between 1931 and 1932, there was no corresponding decline in the 'real' hourly earnings of the average railway employee," Dr. King said. "Except for slight setbacks in 1934 and 1937, average 'real' hourly wages have advanced steadily since 1929. The upward movement was especially strong between 1930 and 1931, and between 1937 and 1938."

Rail Worker's Purchasing Power 26 Per Cent Above 1929

Since a man's livelihood is dependent upon weekly, rather than hourly, earnings, Dr. King stated, more significant still is the fact that, between 1929 and the present time, average weekly "real" earnings of railway workers have risen by 26 per cent. With a decline of 16 per cent in the cost of living, average weekly "money" earnings of railroad employees have risen from $32.07 in 1929 to $33.73 in the first half of 1938, thus providing an increased purchasing power now of 26 per cent above 1929. Reduction in the average number of hours worked per week has prevented "real" earnings per week from rising to the same extent as "real" wages per hour, Dr. King said.

"In most times and places in the world's history," continued Dr. King, "a 'real' wage increase of 26 per cent in less than a decade would be considered very remarkable. In the United States, however, because of the rapid upward trend in per capita production which has characterized most of the last hundred years, such a proportional rate of increase might be regarded as not strikingly abnormal. This point of view might indeed be reasonable, were it not for the fact that a profound change in the course of our economic life has taken place since 1929.

"Industrial production as a whole, monthly national income, factory employment and payrolls, retail sales, construction contracts awarded, and wholesale prices all fell very sharply between 1929 and 1932. From 1933 to 1937, all showed marked recovery, but in no instance was the peak attained in 1937 as high as that of 1929. Since the middle of 1937, industrial production, monthly income payments, factory employment, factory payrolls and wholesale prices have all declined to a great extent. The fact to be noted is, that while the industries of the nation have had great ups and downs, and while the trends in the various fields have been such as to make the current figures much lower than the corresponding ones for 1929, average 'real' earnings of railroad workers have nevertheless persistently moved upward.

"Since July of last year, most of the business indica-

tors have registered very sharp declines. Under the circumstances one might expect that railway wages would likewise have fallen. However, the earnings of railway employees have, instead, moved upward. In short, as business has fallen off, railway 'real' wages have increased."

The average railway employee, in the early part of 1938, Dr. King went on, earned about 41 per cent more than did the average employee in the United States. In this comparison, the witness pointed out, official salaries were excluded in the railway figures, while such official salaries were included in the average annual earnings of all employees.

According to Dr. King, average annual earnings of railroad workers exceeded the corresponding earnings of all employees by $221 in 1929; by 1938, the spread in favor of railroad employees had increased to $508. "Furthermore," said Dr. King, "railway employees, on the average, receive higher annual pay than that of employees in any other industry except finance."

Turning from wage comparisons covering all employees, Dr. King next discussed the situation in the light of the smaller group known as wage earners. He showed that "in the first half of 1938 railway wage workers, on the average, received materially higher hourly pay than did factory wage workers producing non-ferrous metals, lumber, stone, clay and glass, textiles, leather and leather products, food and kindred products and tobacco. They received higher average hourly pay than did wage workers engaged in metalliferous mining, quarrying, laundries, or dyeing and cleaning. However, wage earners in a few particular industries, received hourly earnings somewhat higher than those of railroad wage workers. In these industries, however, the nominal advantage of higher hourly pay was offset by lack of opportunity to work for a "reasonable" number of hours per week.

Among such wage earners, the witness cited anthracite coal miners, construction workers, workers in the transportation equipment manufacturing industry, bituminous coal miners, workers in the rubber products industry, paper and printing workers, workers in the iron and steel industry, and workers in the chemical and petroleum refining industry.

Rail Wages Moved Against the Tide

"However, because of their limited opportunity to work," Dr. King pointed out, "all of these men, despite their higher average hourly earnings, ended the week with a smaller pay check than did railroad wage earners. The average weekly earnings of railroad wage earners were $33.17, while the corresponding weekly averages were $25.16 for anthracite coal miners, $28.75 for construction workers; $27.28 for workers in the transportation equipment manufacturing industry; $18.97 for bituminous coal miners; $22.48 for workers in the rubber products industry, $27.30 for paper and printing workers; $21.91 for workers in the iron and steel industry; and $27.80 for workers in the chemical and petroleum refining industry." Another point stressed by Dr. King was his finding that the income of railway workers has risen while almost all the other factors of wages and business activity have fallen materially and railway net income has disappeared. This statement was based upon a comparison of the first half of 1938 with the same period in 1929.

Comparisons made by Dr. King between the first six months of 1937 and of 1938 likewise showed railroad wages going up and almost everybody and everything else going down. "This latter comparison," the witness stated, "indicates the net effect of the latest depression on various phases of industry." It "serves to show how different conditions are today from the conditions prevailing in 1937, when the last increase in railway wages was made. This 1937 increase in wage rates has resulted in a definite advance in the pay of railway employees, while, at the same time, a marked decline has occurred in most phases of economic activity accompanied by a shrinkage in railway income so large as to forecast bankruptcy of the industry, unless the situation is remedied."

Following Dr. King's direct presentation, Dean Landis asked the witness several questions with respect to the comparability of the railway employment and wage figures, taken from I. C. C. reports, with similar data from other industries reporting to other agencies on different bases. As Mr. Landis appraised the situation the matter of comparability rested on opinion—in other words the exhibits compared "pears and apples, but Dr. King thinks they are comparable." The witness replied that in his opinion the different bases do not introduce distortions of consequence.

When Judge Hay made the point that Dr. King's exhibits make no allowance for unemployed railroad men, the witness replied that he had been discussing the status of persons who would be affected by a wage cut. The R.L.E.A. counsel conceded that furloughed men would not be affected—"they've had their heads chopped off"—but he nevertheless insisted that the unemployed men should have been considered in Dr. King's endeavor to show that railroad employees have been faring better than workers in other industries. Such a tack, Dr. King replied, would have driven him into other things in order to present the whole picture, i.e., into the matter of how increasing wage scales have forced railroad rates to points higher than the traffic will bear, and thus brought unemployment. He insisted that the picture he painted was "entirely accurate" as to wages, adding that the board was dealing only with wages—not unemployment. Dr. King went on to say, however, that in his opinion, wages in all industries are too low, but the universal wish for higher pay can't be granted until production is at a point which permits such a development. He agreed with Mr. Hay that a major objective was the bringing up of wages, but repeated that this can come about only with increased production, which latter can be accomplished only by fixing wage rates low enough to put people to work making goods at prices which they will bring in present markets. "When you get high productivity, you get prosperity," he added.

R. J. Littlefield, superintendent of motor service of the Pennsylvania, testified briefly with respect to highway competition and railroad efforts to combat it. The revenue of truck companies in which railroads have a financial interest, he said, is less than three per cent of the total revenues of all companies operating motor trucks for hire.

A study of the Interstate Commerce Commission, Mr. Littlefield went on, showed that out of 25,864 applications for certificates to engage in interstate trucking under the Federal Motor Carrier Act, 95 per cent of the applicants operated fewer than 10 trucks each, and 49 per cent had only one truck each. Comparison of these figures with the small number of railroad companies, he added, showed the complexity of the practical problem of truck regulation, even if confined to these interstate companies.

"And when we add the many thousands of trucks which are not governed by the Act," he continued, "and

include the myriad of itinerant operators who have no regular schedules or regular routes or standard charges, and who operate when and as weather, traffic and their own financial conditions permit, it is seen that the problem of regulation of the railroads' principal competitor is not one that can be lightly or casually treated by mere generalities."

Testimony of M. W. Clement

There was little cross-examination of Mr. Littlefield, who was followed in the witness chair by M. W. Clement, president of the Pennsylvania. The P. R. R. chief executive said that whether railroad employees realize it or not, by far the most important problem with which they are confronted today is the survival of the industry which gives them jobs and, in turn, the survival of their occupations. Pointing out that competition has taken about 20 per cent of the business away from the railroads, and an equal or greater amount of labor off the railroads, he declared that "unless railroad transportation can compete in costs with other forms of transportation, the railroads will lose the business and railroad employees will lose their jobs."

"As men enter transportation today," he went on, "they go into the water, bus or truck fields, the railroads only filling up their own thinning ranks. The number of employees in the rail transportation field is lessening, and will continue to lessen when it should be increasing —unless wage and other questions are approached and disposed of from a common-sense standpoint and with due regard to the future as well as to the present. The problem with which the railroads are faced is to reduce the cost of transportation to the consumer, that the growth of rail transportation may resume. Labor is about 60 per cent of the whole cost, and the cost of transportation governs the competition."

Declaring that the best way to protect men in the railroad industry is to protect the industry for them, Mr. Clement stated that railroad labor is worried about unemployment, but that its leaders' worry should not be because of a reduction in the pay of railroad jobs but because those who enter other transportation fields make less money and have less favorable working conditions. "It's not the wages in the railroad industry that should bother them; it's the wages they may be forced to take in other employment. What we are trying here is to determine how far these men should co-operate in an emergency to help themselves, to their own best interest in the end.

"If the men could themselves see the picture as a whole that their industry presents, we would not be here, as they would probably do what is proposed. They are loyal to, and interested, in their industry. They have grown powerful, but they do not seem to realize that with power comes responsibility, and that in the way they meet that responsibility lies the welfare of the industry, and in that welfare, lies the future of these employees."

Stating that he has always believed in high wages and in good working conditions, Mr. Clement pointed out that "when these men wanted an increase in 1937, when it looked for a short while as though we were coming out of the depression, the railroads accepted the terms and spirit of the Railway Labor Act and entered into mediation with either a just compromise or arbitration in view. When the railroads approached the employees to adjust the wage situation to meet the present depression, they were adamant in conference and finally flatly declined to arbitrate."

"The effect of what their leadership has been trying to accomplish for the last two decades is to build their organization into an unregulated monopoly. Monopoly cannot stand in this country without regulation, and even then it cannot stand if it produces public service at a cost higher than the public can find elsewhere."

Mr. Clement next pointed out how the increased cost of rail transportation brought about during the war period has returned to the field competing forms of transportation under government subsidy, taking away a substantial part of the rail transportation business. This diversion, together with the effect of the decentralization of business to avoid the cost of transportation, has brought about a situation wherein the growth of rail transportation has been retarded, with its harmful results on railroad employment.

"In order that the railroads might continue competitively under their increased costs and greatly increased labor rates," he said, "it has been necessary to reduce the cost of operation. As the major portion of operating cost is labor, the efforts of the railroads to reduce costs have resulted in sustaining wages for a fewer number of employees. Yet, legislatively and otherwise, these men make every effort to compel increased railroad employment, although refusing to recognize the fact that the wage bill is the principal factor; and as far as the future is concerned it will continue to be the principal factor, whether we have privately owned, government regulated, or publicly owned, politically regulated railroads."

Discussing the competitive situation further, Mr. Clement said that comparison of railroad and highway wages shows that railroad labor works less hours per month, makes more wages per month, and offers more continuity of employment. "When a bus takes to the highway, one man is sufficient to man the bus. When a truck takes to the highway, one man is sufficient to man the truck—sometimes two. When a single gas car takes to the railroad it is necessary, under the restrictions that surround rail transportation, to put three men on it. The railroads cannot afford pay for three men where the highways pay for but one man. Therefore, the railroad's single car disappears; the highway takes the business; and all kinds of railroad labor has lost occupation.

"The very survival of railroad labor depends upon the willingness of railroad men to recognize that a factor in this competition is that railroad wages must adjust themselves to meet the situation; that competition means as much to labor as it does to the industry; and, unless that competition is met, these men will find themselves getting their livelihood in some other occupation.

"Out of the heavy increased costs put on these railroads since the war, practically all the improvement in the art has been to the benefit of these men, because the improvements have been based on enabling the railroads to carry their expenses—wages—and give to the public a transportation service at prices which it will pay."

Concluding his statement, Mr. Clement said he was speaking, not as president of the Pennsylvania, representing its corporate interests, but as responsible, not only to its nearly 90,000 employees now on the payrolls but to the tens of thousands who are out of railroad employment; and, above all, "a responsibility to what I see as best for the emyloyees, say five years from now, ten years from now, and not only from the standpoint of the immediate situation of today."

Following the reading of his prepared statement, Mr. Clement said in response to a question from Mr. Fort that salaries of P. R. R. officers are determined by the board of directors who appraise the job and fix the compensation accordingly; then try to find the man to

(*Continued on page 526*)

Locomotive Supervisors Hold Live Meeting

Fuel and Traveling Engineers' Association discuss problems of fuel economy, locomotive design and operation, and modern train handling

A STIMULATING program of individual papers and committee reports dealing with numerous aspects of fuel economy and important phases of modern high-speed-train operation was presented at the second annual meeting of the Railway Fuel and Traveling Engineers' Association which took place at the Hotel Sherman, Chicago, on Tuesday and Wednesday, September 27 and 28. The president, J. C. Lewis, road foreman of engines, Richmond, Fredericksburg & Potomac, was in the chair.

Three sessions were held on Tuesday. In the morning, reports were presented on the relation to fuel economy of the engineman, fireman, roundhouse foreman, the traveling engineer and fuel supervisor, and on the utilization of locomotives. At the afternoon session a paper, "Avoidable Factors in Locomotive Design Affecting Fuel Conservation," was presented by F. P. Roesch, vice-president, Standard Stoker Company. This will appear in a later issue. Committees on Fuel Records and Statistics and on Steam Turbine and Steam-Condensing Locomotives reported. The former dealt with two subjects: "Shall fuel records be based on the quantity of fuel or the cost of fuel?" and "What the supervisor of fuel can do to improve railroad operation." The evening session was devoted to a discussion of firing practice, both oil and coal.

On Wednesday morning two papers on air-brake subjects were presented, and the discussion touched on the entire subject of train handling as affected by new types of equipment and increased speeds. One of these papers was a comparison of the functions and operation of the No. 8ET locomotive brake equipment with the No. 6ET equipment, and the other was a discussion of the problems of high-speed passenger-train braking.

Addresses

During the meeting the convention was addressed by J. M. Hall, chief inspector, Bureau of Locomotive Inspection, Interstate Commerce Commission; by Charles F. Richardson, president, West Kentucky Coal Company, past-president of the association, and by Roy V. Wright, managing editor, *Railway Age*. Mr. Hall called attention to the neglect which caused the recent explosion of the boiler on the Northern Pacific articulated locomotive. He placed the responsibility directly on the traveling engineers to see that the engine crews are fully alive to their responsibility in the matter of safety of operation and that they do not become careless in its discharge. Mr. Richardson called attention to the community of interests between the railroads and the coal miners in trying to bring about a more equitable situa-

tion with respect to the marketing of coal and oil, particularly with respect to the unequal incidence of taxation on the railroads and the pipe lines. Mr. Wright referred particularly to the shippers' demands for improved schedules, for the prevention of loss and damage to freight, and to the effect of the smoke nuisance on public relations in residential areas. He cited the outstanding results in the reduction of the railroad smoke nuisance in Hudson County, N. J., largely brought about by the work of the Hudson County Railroad Smoke Association, an organization of local railroad men.

Officers Elected

The proposed constitution placed before the association at last year's meeting was adopted by acclamation and the following officers were elected for the ensuing year: President, John R. Jackson, engineer tests, Missouri Pacific; vice-presidents, George M. Boh, district road foreman and fuel supervisor, Erie, W. H. Davies. superintendent air brakes, Wabash, and A. A. Raymond, superintendent fuel and locomotive performance, New York Central. The following were elected members of the Executive Committee for two years: M. F. Brown, fuel supervisor, Northern Pacific; S. A. Dickson, supervisor of fuel, Alton, and L. E. Dix, fuel supervisor, Texas & Pacific. J. J. Kane, road foreman engines, Lehigh Valley, was elected a member of the Executive Committee for one year to fill the unexpired term of W. H. Davies, elected a vice-president.

Summaries or abstracts of a number of the reports and papers follow.

Fuel Economy

Three papers were presented on this subject under the general chairmanship of Robert Collett, fuel agent, St. Louis-San Francisco. Harry Finberg, locomotive engineer, Northern Pacific, discussed the relationship of the engineer and fireman to fuel economy; R. K. Thornley, enginehouse foreman, Wabash, dealt with the responsibility of the enginehouse foreman, and a committee, of which George M. Boh, district road foreman and fuel supervisor, Erie, was chairman, L. E. Dix, fuel supervisor, Texas & Pacific, A. S. Headley, road foreman of engines, Baltimore & Ohio, and L. D. Burdell, road foreman of engines, Erie, were members, dealt with the part played by the traveling engineer and fuel supervisor.

Mr. Finberg drew attention to the improvements which have been made in recent years in conditions affecting the economy with which fuel is burned on the locomotive, including cleaner fuel and the increased efficiency and general free steaming character of locomotives. To some extent, he said, the effect of these factors, as well as of the efforts of all those interested in fuel economy, has been masked by the general increase in operating speeds which take toll in increased fuel consumption.

The relationship of the engineer, he said, begins with the student fireman. To be effective, it should begin by a careful weeding out of those prospective firemen, who, at the outset, indicate that they are not adapted to the job. This, he said, would soon again become an important matter because of the high average age of the men now in service. He stressed the importance of never letting down in the efforts of the association to create interest in fuel economy, as a failure to do so would quickly result in fuel economy slipping backward toward the old starting point.

In the discussion attention was directed to the discouraging lack of co-operation with the engine crew, who work together effectively to make passenger-train schedules with economy, only to see time lost at station stops by other members of the crew and by the station forces which the engine crew is expected to make up at the expense of fuel economy. As improved motive power has been brought out shortened schedules or increased train loads have generally kept the demand on it close to its capacity and to some there seems to be little opportunity for further improvements in fuel economy. However, even under these conditions, it was pointed out, there is still the spread between the best men and the others to strive for.

Mr. Thornley, in his paper, stressed the importance of personality in the enginehouse foreman as a factor in fuel economy both with respect to the fuel consumed under his own jurisdiction as well as that burned in the locomotives on the road. "Good judgment," he said, "common sense, honesty and willingness to learn, and ability to use the experience and take the good advice of others are all very important factors toward the conservation of fuel."

Among the aspects of fuel conservation affected by the actions of the enginehouse foreman he named the training and supervision of fire builders, usually the lowest paid class of labor employed in the roundhouse, the prevention of an accumulation of wasteful air leaks in the engine-terminal pipe lines, and the ability to secure the co-operation of the engine crews, a matter in the development of which the enginehouse foreman must take the initiative.

In the matter of air piping leaks Mr. Thornley presented a table showing the number of cubic feet of air per month lost through various sized leaks and the cost of these amounts per month. He also presented a similar table showing the pounds of steam wasted through leaks, expressing their cost in dollars per month. These tables, in blue-print form, are posted in the enginehouse where they serve to call the attention of all employees to the cost of neglect.

In the paper read by Mr. Boh, on the responsibility of the fuel supervisor and traveling engineer, stress was placed on the importance of various factors in preparing and loading coal at the mines and in handling it to the locomotive so that it may arrive on the tank in the best possible condition for the firebox. First is the importance of removing non-combustible at the mine, of furnishing clean, tight cars for loading at the mines, the use of magnets to remove lost mine tools before the coal is loaded, employing loaders with adjustable booms, when dealing with coals of soft texture, to reduce the production of fines, and the breaking of coal at the mine to the maximum size suitable for the locomotive. The latter practice tends to produce less fines because coal on coming from the mine shatters less in crushing than when crushed later. There is also less separation of fines and lump in each successive handling when the larger lumps have been reduced by crushing at the mine.

Keeping dumping pits and storage bins at coaling stations partially filled assists in handling coals of soft texture with a minimum of deterioration. The higher ash coals can sometimes be used where they can be segregated for short runs where the consumption rates are low. Where facilities permit, a more economical mixture may sometimes be obtained by blending various textures and grades of coal.

The duties of the traveling engineer are such that he must be a salesman of no mean ability to get the best results. His responsibility for the education of the enginemen, both with respect to their knowledge of the locomotive and its appliances, as well as to their under-

standing and observance of good practice in locomotive operation, directly influences fuel economy. Upon the success of his educational campaigns depends the ability of the enginemen to write clear and intelligent work reports which have so important an influence on engine-house expense as well as upon the fuel consumption of the locomotive itself.

The many changes which have taken place in the matter of brake equipment and conditions affecting braking place a new responsibility on the traveling engineer in the development of the best practice of train handling. In matters of broader operating policy his influence in effecting the proper selection and assignment of the locomotive for each run and in keeping the number of active locomotives under fire at terminals to a minimum, in keeping freight-train tonnages balanced, and in numerous other matters affecting train operation has an important bearing on fuel economy.

Utilization of Locomotives

[The committee, of which A. A. Raymond, superintendent fuel and locomotive performance, New York Central, was chairman, presented a table showing the miles per active locomotive day for the 13 largest roads in the United States, reported by the Bureau of Railway Economics for June, 1938. The lowest performance was 127.8 miles per day in passenger service, 73.8 miles per day in freight service, and 41.7 miles per day in switching service. The average for the United States is 176.7 miles per day in passenger service, 97.9 miles per day in freight service, and 62.5 miles per day in switching service. The highest performance is quoted in the following abstract of the report.—Editor.]

In passenger service the highest mileage per active locomotive day was obtained on the Santa Fe—271 miles. Perhaps a fair speed in passenger service for the country as a whole can be accepted as 35 miles per hour, so that 271 miles represents 7¾ hours service per day. In freight service the highest again is the Santa Fe—129 miles per active locomotive day. Our last full year's statistical reports indicate a freight-train speed of approximately 16 miles per hour, so that dividing the 129 miles by 16 we find that the freight engines are working approximately eight hours a day. In switch service the highest mileage is obtained by the Pennsylvania system—77 miles per active locomotive day, and this is based on six miles per hour, so that it represents nearly 13 hours service.

Road locomotives working approximately eight hours a day and yard engines thirteen hours a day is being accomplished by only a very few systems so that perhaps it is not necessary to discuss how we could get an average of twelve hours a day from our road engines and sixteen from our switch but rather to discuss whether it is possible to obtain eight hours a day from the road engines and thirteen from the switch. Thus theoretical figures are not being discussed but figures obtained in everyday practical operations on large systems.

What Interferes with Improvement?

What interferes or prevents road engines in general from working eight hours a day and what interferes with switch engines, in general, working thirteen hours a day? Perhaps the reason for engines not working a greater number of hours per day comes under some one of the following headings:

1—End of the road (or train does not go any further).
2—Because of necessary switching the train will be held in the yard for three or more hours.
3—Two trains are combined so there is a surplus of one locomotive.
4—The train goes to a division using a different class of power.
5—The ash pan is full.
6—All the available water has been used out of the tender cistern.
7—The coal has all been used.

These are days of fast schedules. Trains cannot be held at stations a long time while locomotives go to the coal dock for another tender load of coal, so if there is no coaling facility on the main line it means that an extra locomotive must be provided, fully coaled, so that the train can move forward promptly.

Changing Engines Makes Coal More Expensive

Changing locomotives, of course, loses the time of the locomotive taken off. Considering a typical 24-hour day, the average loss of time is perhaps five hours before this engine is coaled and returned. Suppose that a passenger train averaging about 60 miles per hour burns perhaps three tons an hour so that after nine hours work it is necessary to take the engine off to get 27 tons on the tank and that, in obtaining this 27 tons, the engine is out of service approximately five hours. That is, for every nine hours the engine works it is idle five hours or it is working 64 per cent of the time. This, carried through, would indicate that it takes 1⅓ locomotives to do the work of one engine and that this is because it needed a tank of coal.

Let us suppose that coal is worth $2 at the mine and it costs about $1 more to get it from the mine onto the locomotive, or an average cost of $3 a ton for the 27 tons or $81. To this $81, however, must be added the cost of fuel used in going to and from the enginehouse, cleaning or dumping the fire, perhaps the extra cost of handling a locomotive through a large enginehouse organization if no repairs are needed, and the value of a locomotive for five hours at at least $1 an hour so that we have:

$81 for coal.
3 for coal burned to and from the enginehouse, cleaning and dumping the fire.
5 for extra enginehouse cost.
5 for the value of the engine while out of service.

$94 total.

Divided by the 27 tons, this gives approximately $3.50 a ton. That is, 16 per cent increase in the cost of coal, because the coal wasn't handy.

In freight service the picture is the same. A locomotive, making perhaps 40 miles per hour and using perhaps four tons of coal each hour on a division run of 150 miles, would then use 15 tons—some left but not enough to make the next terminal. On a symbol freight, with the coal dock at the enginehouse out of the way of the yard, for prompt handling of the train it is advisable to supply another locomotive.

In this case $45 worth of coal and similar expenses for coal to and from the enginehouse, regular enginehouse expense and five hours out of service for the locomotive makes a total of $58 for 15 tons, or a little over $3.85 a ton. Another increase of 28 per cent in the cost of fuel because the coal wasn't handy.

Switching locomotives are working 16 to 24 hours in many yards but these engines burn very few tons of coal in a 24-hour period. Hence, if coal were available and the fire maintained in reasonably good condition, it is only necessary to clean the fire after extended intervals where there is a possibility of working the locomo-

tives for 24 hours. Of course there are many yards where there are only a few 24-hour jobs available. Suppose a locomotive needs six tons of coal and again that the facilities are not handy. [The ash pit, and coal dock should be part of the general yardmaster's and chief car Inspector's office.]

The 6 tons of coal cost perhaps $18, made up of $3 for the ton of coal used while the engine is out of service, $2 for enginehouse expense and $7 for the time the engine is idle before she can be returned, or $30 an average of $5 a ton. This is an increase of 66 per cent in the price of coal because the facilities were not handy.

Many roads have ash, coal and water facilities for freight and switch power handy so that, for instance, if a symbol freight train comes into a yard and a few of the cars require icing, etc., the engine can be run to a handy pit where the fire will be cleaned, the engine will be coaled, take a tank of water without moving and necessary inspection can be made so that by the time the train is iced and the cars are being shoved down into the yard the engine can couple on and start pumping the air. This perhaps can be a spur off of the ladder with an inexpensive coal-handling plant such as we see in all of our local coal yards. One can be obtained that will deliver two tons a minute at almost infinitesimal expense when the cost of it is compared to the cost of using another locomotive. In the case of a freight locomotive there is a bonus of $8 to $13 for ever locomotive handled in this way.

In the case of a switching locomotive there was one yard where it was possible to put one of these small coal facilities on an unused spur track. The yard crew during their lunch period set the engine on the track over the ash pit and when they finished lunch she had coal, water, fire cleaned and was ready to go back to work, with a bonus of perhaps $10 for every engine handled in that way. Of course if any of these engines are found to need round house repairs they are immediately sent to the house.

The proceedings of all mechanical department meetings would seem to establish the fact that substantial economy results from long locomotive runs, because less engines are needed, less housing facilities required and because the fuel used in enginehouse territory is saved. The reliability of modern locomotives has been proved on many through runs and high individual locomotive mileages are a matter of record. The question, then, would seem to be, why don't a majority of the locomotives run through and why is the mileage per locomotive day, as reported by the Bureau of Railway Economics, so low?

One of the reasons why monthly mileages are lower than the length of runs should make possible is keeping too many active locomotives around engine terminals. With runs of over 500 miles per day some locomotives make between 14,000 and 16,000 miles per month, but most generally not over 6,000. This suggests that locomotives should be regularly assigned to long runs and kept on their regular assignments.

Two factors were pointed out during the discussion which affected the meanings of the average miles and average hours in service per day. The relation of branch-line mileage and train mileage to main-line mileage and train mileage affects the significance of system mileage utilization figures. In this connection it was pointed out that the Santa Fe, which has exceptionally high daily mileage figures, has less branch-line miles than many other large systems. In the matter of hours in service, recent increases in train speeds tend to reduce the daily hours in service for a given number of miles per day.

The Santa Fe now operates its through passenger trains with locomotive runs of 900 miles between Chicago and La Junta, Colo., and 1,200 miles between La Junta, and Los Angeles, Calif. These passenger runs are handled throughout on fuel oil. The tanks carry 7,000 gallons of fuel and 27,000 gallons of water. Oil is taken at two intermediate points in each of the runs. Mileages are now up to 18,000 per month, and the road is working toward 20,000 miles per month as an objective. Foam-Meters on the passenger locomotives permit operating them for 30 days without boiler wash, instead of changing water at one end of the line and washing out at the other. These are now also being applied on freight power.

There was considerable discussion of the proper handling of fires in coal-burning territory to keep locomotives on the road for long runs. A number of instances were cited where several kinds and qualities of coal are being burned on the same locomotive in the course of a long run. This requires drafting the locomotive for that coal which requires the sharpest draft. To keep the fire in condition when burning a coal with low-fusing ash, it has been found advisable to open the blower valve before the throttle is closed to prevent a back draft of hot gases through the fuel and ash bed over the grate.

Some question was raised as to the advisability of the practice of keeping locomotives on long runs where several coals are used, because of the probable increase in the consumption of the better-quality coals resulting from the unfavorable conditions under which they would have to be burned. Offsetting this is the factor of reduced coal consumption at terminals affected by keeping the locomotive on the road.

Quantity Versus Cost Statistics of Fuel Performance

A report on the question "Shall fuel performance records be stated in terms of pounds of coal per service unit or cost of fuel per service unit" was presented by a committee, of which E. E. Ramey, fuel engineer, Baltimore & Ohio, was chairman, and W. J. Overmire, fuel engineer, New York Central, and E. G. Sanders, fuel conservation engineer, Atchison, Topeka & Santa Fe, were members.

The report stated that neither method, itself, shows a complete picture. Local employees in charge of operation have no control over the quality or grade of fuel purchased nor over the prices paid, and their effectiveness in fuel performance can be measured only by the quantities they use in producing a unit of service.

On the other hand, officers in charge of the management of the railroad and responsible for financial results of the operation as a whole are principally interested in the financial result stated in cost per unit of service and need that form of report in addition to the report of quantities used per unit of service. The committee pointed out that price fluctuations and variations in relative quantities of coal from different mines or different fields, which affect the average price from month to month, destroy the comparability of fuel-cost statistics from year to year and even within a single year.

Since the real use of statistical reports is to disclose the trend of performance, the cost statistics should be used to supplement but not to replace the more stable and fundamental index of performance based upon quantities of coal consumed per unit of service. The cost figures are a valuable supplement for certain officers but of little value as a means of stimulating general interest in fuel economy. The cost statistics are also valuable under special conditions such as arise from the operation of both Diesel and steam locomotives using differ-

ent fuels and also on roads using both coal and oil as steam-locomotive fuel.

Steam Turbines and Condensing Locomotives

The Committee on Steam Turbines and Condensing Locomotives, of which L. P. Michael, chief mechanical engineer, Chicago & North Western, is chairman, presented a progress report. It was noted that four non-condensing steam-powered locomotives with direct mechanical transmissions are in service—three in Sweden and one in England—and that several designs are under consideration in Germany and France, while in the United States the 5,000-hp., two-unit steam turbine locomotive being built for the Union Pacific is expected to be ready for service in a short time. The report contained a compilation of Diesel-electric and steam locomotives, including the steam-turbine-electric, which is included herewith.

In conclusion the report stated that "These tabulated comparisons of motive-power equipment are presented with the hope that the locomotive designers and builders will sharpen their pencils and make greater effort to produce designs which will reduce the number of units, number of wheels and axles, length, weight, multiplicity of electrical devices and complications to a minimum. When this is done it will greatly reduce the first cost, fuel, oil, operating and maintenance costs of such motive-power equipment."

Modern High-Speed Passenger Trains

Railroad	Locomotives: Type	No. Units	Wheel arrangement	Length, ft.	Hp.	Weight, lb.*	Lb. per hp.	Cars: No.	Avg. weight, lb.	Total weight, lb.	Train weight, lb.	Weight of locomotive ÷ weight of train, per cent	Weight of train, lb. ÷ hp. of locomotive
A	Diesel	1	4-4	60	1,800	166,000	138	6	65,000	390,000	596,000	27.8	496
B	Diesel	2	4-4+4-4	120	2,100	370,000	176	9	71,000	639,000	1,009,000	36.7	481
C	Diesel	2	4-4+4-4	133	2,400	429,000	179	10	50,000	900,000	1,329,000	32.3	554
D	Diesel	2	4-4+4-4	132	2,400	438,000	182	11	77,000	847,000	1,285,000	34.2	535
E	Diesel	3**	6-6+6-6+6-6	210	5,400	883,000	164	14	119,000	1,666,000	2,549,000	34.6	472
F	Diesel	3**	6-6+6-6+6-6	210	5,400	878,000	162	14	117,000	1,638,000	2,516,000	34.9	466
G	Diesel	1	4-4	58	1,800	223,000	124	6	73,000	438,000	661,000	33.7	367
H	Diesel	2	4-4+4-4	141	3,600	587,000	160	9	120,000	1,080,000	1,667,000	35.2	463
I	Diesel	2	4-4+4-4	112	3,000	426,000	142	10	83,100	831,000	1,257,000	33.9	419
J	Steam	1	4-6-2	89	3,100	592,000	191	8	152,000	1,216,000	1,808,000	32.7	583
K	Steam	1	4-4-2	90	2,400	528,000	250	9	97,500	877,500	1,405,500	37.6	586
L	Steam	1	4-6-2	80	2,800	609,000	218	7	128,000	896,000	1,505,000	40.5	430
M	Steam	1	4-8-4	107	4,000	822,000	205	12	101,000	1,212,000	2,034,000	40.4	509
N	Steam	1	4-6-4	96	3,500	674,000	187	16	132,000	2,112,000	2,786,000	24.2	796
O	Steam	1	4-6-2	83	3,200	522,000	163	9	130,000	1,170,000	1,692,000	30.9	529
P	Steam	1	4-6-4	102	4,500	772,000	172	16	135,000	2,160,000	2,932,000	26.3	652
Q	Steam	1†	6-4-4-6	122	6,000	1,050,000	175	18	130,000	2,340,000	3,390,000	31.0	565
R	Steam-turbo elec.	2†	4-6-6-4+4-6-6-4	182	5,000	1,060,000	210	16	135,000	2,160,000	3,220,000	32.9	644

* Includes weight of tender for steam locomotives.
** Does not include auxiliary power equipment, carried in first car back of the three power units.
† Not yet in service, train consist assumed.

Relation of Fuel Supervisors To Railroad Operation

What the supervisor of fuel conservation can do to aid in the improvement of railroad operation was the subject of a report prepared by a committee of which E. E. Ramey, fuel engineer, Baltimore & Ohio, was chairman. Other members were G. F. Anderson, general fuel supervisor, Great Northern, P. E. Beuttell, Chicago, Milwaukee, St. Paul & Pacific, and A. A. Raymond, superintendent fuel and locomotive performance, New York Central. The entire report is based on the premise that the supervisor of fuel conservation is properly a free lance whose responsibility extends into practically every branch of railroad operation and into contact with every group of employees. The exercise of this responsibility and such authority as may accompany it must be discharged with tact. The report points out that there is little disagreement with the viewpoint that the best possible fuel performance of any railroad accompanies the best possible job of railroad operation in all its phases.

First in the responsibility of the fuel supervisor is the condition of the motive power. There are many features in the matter of adjustments and servicing that, while not at all essential in getting the locomotive over the road and hauling trains on schedule, have an important effect on the degree of economy with which the service is rendered. The fuel supervisor can also effect a strong influence for improvement in railroad operation by consistent missionary work among all grades of engine-terminal employees, including the supervisors. This applies particularly to the work of fire, cleaning, flue cleaning, fire building and to the work of the hostlers.

Another way in which he can exercise an important influence is in his effort to keep the number of active locomotives down to the minimum actually required, thus reducing supplementary locomotive mileage and engine-terminal costs. A further important field where his influence may be effective is in keeping up train loads and reducing excessive train speeds. He should constantly follow up road delays from whatever cause and see that there are no unnecessary delays either on the road or in the engine terminal.

In an engine terminal dispatching 20 engines daily, allowing an hour delay on each of five for cleaning fires, an additional ton of coal would probably be burned due to the delay. If an average of 10 engines a day are permitted to be fired up an hour earlier than necessary, the coal wasted will be enough to pay the wages of an additional fire builder during the rush dispatching period of the day. Road crews should neither be called too early nor held out at the end of the trip merely because they will not run into overtime. Such standing periods, at either end of the run, waste fuel.

The fuel supervisor is in a particularly good position to influence a reduction in delays due to poor dispatching. He can interest himself to see that slow orders are promptly removed when track conditions warrant, that block signals are promptly repaired when out of order, and that there are no delays at coal chutes and water cranes so that the tenders can be quickly filled with both

coal and water. He can also keep a watch on the water treatment at various terminals to see that proper anti-scale compound is being applied by engine crews when taking water. He should be on the alert to pass on suggestions of engine and train crews for improvements in operating conditions.

A field in which the fuel supervisor exercises an important influence has to do with the selection, distribution, preparation, segregation and utilization of locomotive fuel. In preparing fuel at the mine proper sizing and the elimination of impurities are both of great importance. The report suggests that the fuel supervisor should work toward the installation of washer equipment at the mine where the quality of the coal is good but the impurities are of such size and nature that hand-picking methods are impractical.

By segregation, fuel not entirely desirable for general locomotive use may be successfully and economically burned in branch-line or yard service or even on lighter main-line trains. In the matter of utilization the report directs attention to the saving which may be made by unloading coal currently as received and not allowing cars to be switched into stub-end tracks where there will be a continuing loss of volatile under summer sunshine and rain as long as the cars stand.

Discussion

A considerable part of the discussion following the presentation of this report dealt with the preparation of coal at the mine. The need of attention to keep impurities in mechanically loaded coal down to a satisfactory point was stressed. An objective of 750 lb. of foreign matter per car was suggested in this connection. Coal loaded with the loading machines frequently runs as high as 1,700 to 1,800 lb. of foreign matter per car. The value of washers in reducing ash from as high as 15 to 20 per cent down to 10 per cent was also mentioned. The disadvantage of the washed coal, however, lies in its higher moisture content which prevents it from running well in the chutes. To overcome this the installation of a coal laundry at an Illinois mine was cited where the coal is dried following washing so that the moisture of the coal leaving the plant is below that of the coal in the seam itself.

Braking of High Speed Passenger Equipment

Brakes for controlling high-speed trains are still very much in the development stage and there are a number of phases on which development has not progressed to a point where any definite conclusions have been reached. For example, the matter of disc or drum brakes versus wheel brakes, wheel controllers or anti-sliding equipment, etc., are subjects receiving very earnest consideration at the present time.

It is unfortunate that a considerable number of truck-mounted cylinder installations have been devised so that excessive brake-cylinder pressures are required to move the brake shoes against the wheels, thereby greatly reducing the value of the individual car brake with all degrees of brake applications, as well as destroying harmony of action and distribution of brake value in trains including both the body- and the truck-mounted brake equipment. A maximum of 5 lb. pressure in the brake cylinder should be required to move the brake shoes against the wheels.

Tests show that adhesion may range from 5 per cent on a wet or frosty rail to as much as 40 per cent on a well sanded dry rail. The necessity for providing efficient sanding devices is recognized as of vital importance in connection with high-speed train braking. Sanding from the locomotive alone is not sufficient to insure a good rail condition under a long train, as each wheel cleans off some of the sand and the rail condition under the rear portion of the train is a little better than if no sand had been used.

To improve this condition sanding stations have been installed on some of the cars in several of the later high-speed trains, which operate from the control-valve during an emergency brake application. One train being built will have a sanding station in the middle of the train operated by the engineer as well as by the control valve. It would be practicable to consider such applications only to the trains which are made up of cars which operate solely in such trains and which are turned at each end of the run of such trains.

It seems impracticable to attempt to carry sufficient sand on a car to provide for all brake applications. Means must also be provided to prevent operation when not desired, such as when the train is standing, or passing over interlocking plants, etc., entailing more or less complicated mechanism which must be maintained.

In co-operation with the Pennsylvania Railroad the Westinghouse Air Brake Company carried on exhaustive tests on the Wilmington division in the latter part of 1937. Exceedingly short stops were obtained under good rail conditions and with the wheels protected with a Westinghouse device called an anti-wheel slider, and it was established that in order to insure short stops under varying rail conditions an anti-wheel slider is a very desirable device.

It is an accepted theory that the stopping distance of a passenger train should not increase at a much greater ratio than the square of the speed. In this connection, it should be noted that heat is generated whenever the speed of the train is reduced through brake action.

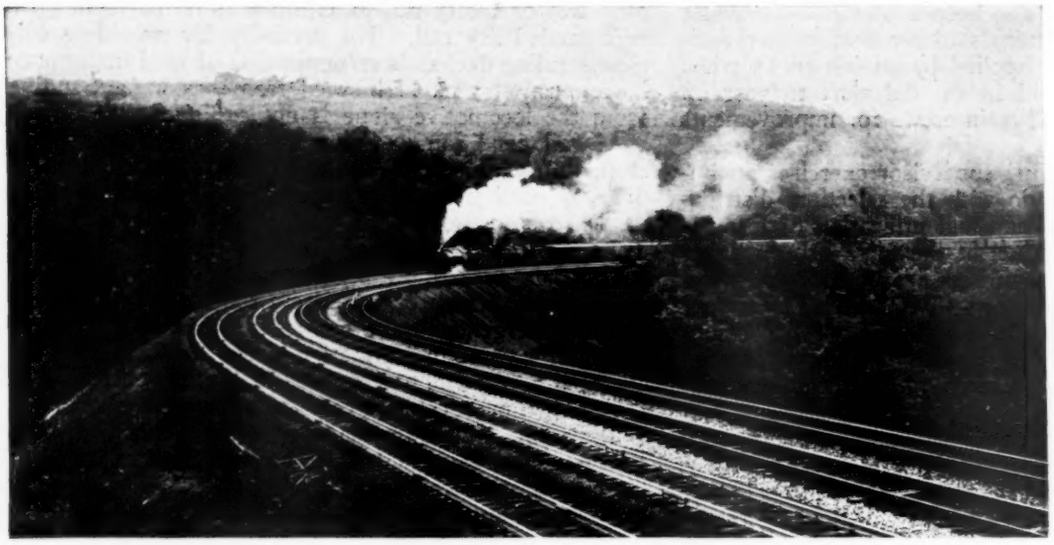
Service or emergency brake applications, braking ratios, in other words, brake-shoe pressures, modify the accumulation of heat, but heat, as such, is inevitably produced whenever the train is stopped. One advantage of light-weight trains not always considered lies in the reduction of heat generated during brake applications. Evidently, in stopping a train from a given speed, the lighter the wheel load the lesser the problem of dissipating the heat created during the stop.

Varying Braking Force During Stops

To accomplish a stop in the shortest distance possible it is necessary to use high braking ratios during the early portion of the stop and to reduce the braking force as the speed reduces to avoid sliding wheels in the lower speed zones. Some of the modern high-speed train brakes are designed to develop as high as 250 per cent braking force at speeds above 65 miles per hour, and automatically to reduce this in two or three steps to about 100 per cent at speeds below 20 miles per hour. This insures a high rate of retardation in the higher speed zones.

In order to reduce the wide range of frictional values at different speeds, one of the brake shoe manufacturers has developed a shoe with carbon inserts, comprising about 13 per cent of the wearing surface. The carbon acts to reduce the surface temperature of the shoe and therefore increases the coefficient of friction at higher speeds without material change at the lower speeds.

(*Continued on page 523*)



Fast Trains and Heavy Traffic Require Good Track

Roadmasters Hold Constructive Convention in Chicago

Abstracts of one paper and five additional reports presented at the fifty-third annual meeting

Part II

A GENERAL report on the activities of the fifty-third annual convention of the Roadmasters and Maintenance of Way Association, held at Chicago on September 20-22, appeared in the *Railway Age* of October 1, including abstracts of the opening addresses; a talk by Fred G. Gurley, assistant vice-president of the Chicago, Burlington & Quincy, on the Roadmaster's Job; a paper by F. S. Schwinn, assistant chief engineer of the Missouri Pacific, on Using Track Labor Efficiently; and a committee report on The Maintenance of Line and Surface to Meet Present Day Operating Requirements. It also included reference to the exhibit of track materials and equipment presented by the Track Supply Association in conjunction with the convention.

Other features of the meeting, abstracts of which are presented on this and following pages, included an address by F. R. Layng, chief engineer of the Bessemer & Lake Erie, on Better Track Construction for Tomorrow's Traffic, and reports on the five following subjects: Materials and Equipment for the Section Gang of Today; The Elimination of Derailments Resulting from Track Defects; The Maintenance of Turnouts; The Programming of Track Work; and Methods of Instructing Track Men in Safety.

Better Track Construction For Tomorrow's Traffic

By F. R. Layng*

There are several influences that will affect the track structure in the future, such as the introduction of equipment built of light-weight materials and a continuing improvement in the design of locomotives and cars, which improvements will have as one of their objectives less damage to the track. It is probable that the present maximum axle loads will not be greatly increased, but it seems fair to assume that we can confidently look for maximum speeds in passenger service up to 125 miles per hour and that 60 miles per hour will be common for freight service. Therefore, the future will demand a constant raising of our present track standards, to the end that the materials making up the track structure will have the longest possible life and that unit maintenance labor costs will be further reduced.

The conditions outlined above will demand that maintenance operations be so conducted that there will be practically no interference with the free flow of traffic, because the slowing down of trains operated at these higher speeds becomes increasingly expensive. For the same reasons the maintenance of slow orders over stretches of track that are either unsafe for scheduled speeds due to the need for replacement of worn materials or during the carrying on of current maintenance work must be avoided to a much greater extent in the future than has been considered necessary in the past. It is also true that any failure in the track, because of these high speeds, may produce accidents much more serious than would be the case if speeds are not so great and this will necessitate the constant maintenance of a high standard of line and surface.

These considerations immediately raise the question as to whether the present rather standardized type of track organization with which we are familiar will best meet

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the conditions in the future. Much more intensive supervision will be required and more and more maintenance operations will require methods that do not necessitate a reduction in the speed of trains. To some extent this has been worked out on multiple track lines by taking out of service for as long a period as possible during the working period, the stretch of track to be worked and an increase of such practice will no doubt be necessary.

On many heavily-used lines it may be necessary to abandon completely what we now know as the small section gang. One factor in connection with this is the necessity to further mechanize many operations, for to give this equipment a reasonable working period, it will be necessary to concentrate it in large gangs.

Much progress has been made in the introduction of machines in maintenance work. These machines have not only reduced the amount of heavy work, which was formerly done by man power, but they have reduced costs and in most cases do a better job.

Tomorrow's traffic will necessitate much better average line and surface than we have heretofore thought necessary. Increased speeds will demand uniform elevation on curves, the amount of superelevation being carefully determined to meet the operating conditions at that particular point. Easements on all curves will be universally used. What are now looked upon as small variations in line and gage will not be permitted. A program of periodic out-of-face surfacing and lining main tracks will be necessary. In this way only can we secure those uniform conditions as to track support that are necessary to produce good riding track.

Good drainage and the stabilization of the subgrade have not received the attention that they merit. Any stretch of track that requires current resurfacing at rather frequent intervals will, under future conditions, demand that a permanent solution be found that will eliminate such evident weakness in the subgrade.

In order to assure satisfactory line and surface for higher speeds and, to some extent, extend the life of the materials in the track structure, standards must be raised as to the quality and quantity of ballast put under the tracks. It is axiomatic that from time to time ballast, when fouled, must be cleaned to the end that it may function as intended. In this particular part of the track structure the future will demand that it receive much more attention than has been customary in the past.

We fully appreciate the economy resulting from the use of treated ties and their installation will be continued to a greater extent in the future. By the expenditure of about 50 cents more per tie we can double its life. The economy of this practice is at once apparent. There are problems, however, in connection with the proper protection of a treated tie that remain to be solved. Such problems start in the woods where the ties are produced and follow through the treating plant, proper care in handling, distribution and insertion in the track, and finally in continued protection as long as they are in service. The careful selection of ties, separated as to species, grade, etc., so that they may be placed in locations best suited to produce most economical results, deserves more detailed supervision.

A more general recognition of the value of the double shoulder tie plate is bound to come in the near future. More study, however, should be given to the method of attaching the plate to the tie. In this connection, further tests should be made to cushion the tie plate on the tie or the rail on the tie plate, by the use of fibre or treated wood. A limited experience with some of these devices indicates that they improve the riding quality of the track and have some bearing on extending the life of the rail and tie. Methods of retarding or preventing splitting must also be developed. A solution of this problem will do much to further extend average tie life.

In connection with turnouts the rather recent development of curved switches is an important refinement over past practice. This in connection with improvements in the details of switch plates, braces, and tie rods will provide much more satisfactory conditions in this part of the track structure.

Very definite progress has been made in the manufacture of rail but, as yet, some of the practices that have proved valuable have not been generally adopted. The end hardening of rail and the slow cooling process both indicate that they will further extend the life of rail and tend to reduce end batter. The building up of worn rail ends by the welding process provides a means of extending the life of the rail considerably before removal is necessary. Protection of track fastenings and tie plates from corrosion, lubrication of track joints, cross grinding of rail ends to prevent chipping, more frequent adjustment of expansion and resetting of rail anchors, as may be necessary, are all practices that tend to extend rail life.

The economy of the use of sections heavier than are generally installed, especially on heavy tonnage lines, is not fully appreciated. A recent study of a division where, some years ago, a change was made from 100-lb. A. R. A. Type B rail to that of 130-lb. section indicated a return on the added investment of 25 per cent, without taking into account many intangibles which accrued due to the use of the heavier section. It is believed that the future will demonstrate that a more general use of such sections as the 131-lb. and even larger sections will produce marked economy in track maintenance. Comparing the 112-lb. and the 131-lb. R. E. sections, we obtain an increase in stiffness of 36 per cent by an increase in weight of 17 per cent. The most useful quality we buy when purchasing rail is stiffness. It is the cheapest way to secure stability and this quality has an all important effect on rail life. It is far cheaper to buy steel than to have to make up for a lack of stiffness by tamping ties.

In the past some emphasis has been laid on the small amount of total metal in a rail that can be used up before replacement is necessary. As means are developed for extending the average life of rail, this reasoning loses force and to this extent removes some objection to the use of the heavier sections. The recent improvements in the manufacture of rail and the more general use of methods to reduce rail batter have an important bearing on the economy resulting from the use of the heavier sections.

Recent tests of welding rail into long lengths tend to show that this practice should be further explored under varied conditions, as it offers probable substantial savings, not only in the increased life of materials in the track structure, and in less wear and tear on equipment, but also marked savings in the labor necessary to maintain line and surface. While experience is all too limited to warrant one in making any positive statements, nevertheless the tests now in service prove the practicability of such construction beyond a doubt.

The Materials and Equipment For the Section Gang of Today

Section gangs cannot function economically or safely without good tools that are maintained in proper condition, according to the committee reporting on this subject, of which M. D. Carothers, division engineer, Alton,

was chairman. Equally important, it was pointed out, is that the tools of the section gang must be of proper specifications, and must be carefully inspected and used according to the standard practice of the railroads.

Recognizing that no specific list of tools would meet the requirements of the section gangs on the railways as a whole, or on any specific road, since the number and type of tools required depend upon so many variable conditions, including the territory in which the railroad is operated and the type of ballast used, the committee made no attempt to prepare a specific list of this character. However, as a guide for railways in any part of the country in deciding what tools and how many of each should be supplied to gangs of various sizes, it presented an all-inclusive list of tools, showing the number of each which should be provided for section gangs of four, six, eight and ten men. The list covered practically all tools and equipment used by the section gangs in the United States, regardless of location, terrain or type of ballast, and from it, it is the thought of the committee that the correct type and number of tools can be selected for section gangs under any specific set of conditions. Altogether, there are 105 items on the list submitted, which shows that the average four-man gang should have a total of 299 various tools, while the average ten-man gang requires 454 tools.

Particularly in view of the large number of tools required by the track forces, the committee emphasized the importance of furnishing each section with an up-to-date tool list, so that each foreman will know exactly what tools he is supposed to have in order to carry on his work successfully. The committee pointed that such a list is essential to enable the roadmaster or supervisor to check the tool supply of his gang, both to see that they have the proper number of each class of tools, and to insure that they do not accumulate an excess of tools through some means or other.

Concerning repaired tools, which are sometimes returned improperly tempered or improperly shaped, the committee recommended that such tools should be returned promptly, and that the shop foreman in charge of the repair of the tools should be advised of the faulty condition in which the repaired tools were received. Unless this is done, according to the report, the shop foreman in charge of repairs will never know of the defective condition of the repaired tools, and much time will be lost in either attempting to use the tools or in shipping them back repeatedly for repairs. Where other than perfect tools are received from the stores department, the committee suggested the same procedure —advising the stores department of any defective tools received, so that it can, through the purchasing agent, avoid the purchase of inadequate or defective tools in the future.

In the remainder of the report, the committee emphasized the importance of carefully loading tools on motor cars and trailer cars for transporting to and from the scene of work; recommended that a good lighting outfit of some approved type be kept on each supervisor's territory for use in emergency work at night; and discussed briefly the type and quantity of track materials which should be maintained on each section to meet daily and emergency requirements.

In conclusion, the report stated that the standard of maintenance of any railroad varies with the kind and quality of tools and materials furnished and also, that the foreman and his gang can be judged by the tools they use. In line with these observations, the committee recommended that an economical list of good tools and materials be supplied for each section gang.

In the discussion of this report the importance of a standard tool list for each gang was emphasized, so that foremen and supervisors can keep an accurate check on tools, also the suggestion that roads might well furnish their foremen with a standard tool house arrangement plan to advantage, as has been done on one road, was received with favor. At another point, the discussion centered around the importance of providing section forces with adequate lighting equipment to carry out emergency work at night, it being pointed out that it is practically impossible for the men to work safely and efficiently by the light of hand lanterns and torches. It was suggested that each gang should be equipped with a few inexpensive carbide flare lights, and that, in any event, the supervisors on each territory should have available adequate lighting equipment that could be rushed to any gang in emergency.

Elimination of Derailments Resulting from Track Defects

The report of the Committee on the Elimination of Train Derailments Resulting from Track Defects, of which A. B. Hillman, roadmaster, Belt Railway Company of Chicago, was chairman, discussed in detail the problems and responsibilities of the track forces in reducing to a minimum derailments caused by track defects, and then analyzed in specific sections the various types of defects which produce derailments and methods of preventing or overcoming these defects.

At the outset, the committee said that to find and remove track defects which might cause derailments, two basic considerations must prevail—competent supervision and inspection, and a reasonably adequate standard of maintenance. Speaking of supervision, it expressed the opinion that this is the least expensive consideration in maintenance, pointing out that good supervision, extending from the head of the department on down through the track inspector or trackwalker, pays handsome dividends. The importance of supervision to the elimination of train derailments from track defects must, it pointed out, be regarded with the same enthusiasm that some of us attach to the elimination of personal injuries. All concerned should be constantly alert for the detection of defective conditions, and when such conditions are found, it emphasized, they should be corrected immediately. Most derailments charged and assigned to track defects, it said, are of such a nature that they might have been detected by alert inspection and supervision, and corrected with a few man-hours of labor and a little material.

In the opinion of the committee, all derailments should be investigated, and it insisted that such investigations be free and open-mindedly prosecuted to the end that the real causes be determined. If all departments interested approach the task of assigning the cause of a derailment with the ultimate purpose of determining the true cause, rather than approaching the question from a defensive point of view as relates to their own department, the committee said, more satisfactory results will come of investigations, and they will provide the greatest benefit from the standpoint of the railroads.

In reporting derailments, the committee cautioned against overlooking the real cause for the derailment and reporting only the results. For example, it observed, it is quite common to say that "wheels climbed rail" or "wheels picked switch points," when the important thing to learn is not what happened, but rather the condition that existed to cause it and how to eliminate future derailments of this type.

In another part of its report, the committee cautioned against overlooking minor defects in the track, which will not in themselves cause derailments under normal conditions, but which, under certain circumstances, coupled with mechanical defects in equipment, will cause derailments. In this regard, it pointed out that a slightly low joint or a small irregularity in elevation on a curve, coupled with a stiff truck or a sudden jolt of a train, may cause derailments when the wheels of a car are at this particular spot. The only certain way of eliminating such derailments, with their reflection on the track maintenance department, it said, is to pursue the safe policy and completely remove such defects as soon as they are found.

In the remainder of its report, the committee gave detailed consideration to the major and most frequently occurring defects which contribute toward train derailments, and then discussed at some length methods of forestalling or of correcting such defects. Among the defects discussed were irregular or insufficient elevation in curves; improper alinement around curves; low track joints; tight or wide track gage; spread track; broken rails resulting from fissures or worn or light rail; broken angle bars; lips on rails at rail joints; defects in switch stands; kinked track; defects in split switches; and inadequately maintained flangeways at highway crossings.

Pointing out that many of the factors in the track contributing to derailments are minor in character, the committee stressed the importance of training foremen to detect these defects before they develop to the point where they might contribute to a derailment in combination with defective locomotives or rolling stock. For thus instructing and educating foremen, the committee laid the responsibility directly upon the supervisor or roadmaster, with his greater knowledge of track condition and of the defects in track which might contribute to derailments.

In concluding its report, the committee, in the light of present operating and economic conditions, called for still greater vigilance on the part of the track forces, pointing out that the increase in size and weight of power and equipment, coupled with increased speed, the fact that small power is fast becoming obsolete, and that railroad managements are requiring that track be suitable for use by a wide variety of equipment, are confronting the track man with one of the most important and costly problems that he has to face.

The Maintenance of Turnouts

A committee of which F. J. Liston, roadmaster, Canadian Pacific, was chairman, presented a detailed treatise on the maintenance of turnouts to bring about the most satisfactory riding conditions and to avoid or overcome the many possible defects which might develop in turnouts and cause or contribute to derailments. Included also in the report was repeated caution and instruction concerning the inspection of turnouts, and the admonition of the committee that the only way to avoid the development of defects which might cause derailments is through daily visual examinations and a weekly detailed inspection. Concerning specific features of turnout construction and maintenance, the report said, in part, as follows:

It is desirable that the nearest joint should be at least five feet and preferably six feet in advance of the switch points. It is equally desirable that these joints be square, if practicable, since this avoids the necessity for placing any joints between the points and the heel of the switch, an objective which is greatly to be desired.

Loose connecting rods are often the cause of switch points becoming blunt. Switch rods and connecting rods should be firmly tightened, and cotter keys should be applied to all bolts where so required, the bolts having their nuts on the up end, where possible, so that the cotter keys will be in full view.

Yard switches should be watched the same as main-line switches, although in many cases material can be used in yards that would not be safe for main lines. Likewise, yard lead switches should be observed closely and kept cleaned and oiled. During the winter, particular attention should be paid to the removal of snow and ice between the switch point rails and the stock rails, because otherwise the points cannot be drawn to a closed position where they fit snugly against the stock rail.

A source of neglect that is not common, but probably the most dangerous of all, is the failure to replace stock rails when they have worn to the limit of safety. When a stock rail is allowed to wear down, the point becomes high or wears correspondingly. Then, if a new stock rail is installed without changing the worn point, a real hazard is created.

The ties throughout the length of the switch rails, and especially at the heel of the points and beyond the joint ahead of the points, should be sound and tamped to an even surface. Deteriorated ties at the heel of the points eventually cause a low joint, even when the heaviest plates are used, and probably bent angle bars, with the result that the points rise as the wheels strike the low spots.

Whether maintained by the signal forces, as in the case of interlocked switches, or by the section forces in the case of stand-operated switches, it is essential that the track be maintained to exact gage. Care should be taken to see that lead rails are cut to the exact length specified in the turnout drawings, and head blocks should be square across the track where the base castings of rigid switch stands show considerable wear after service, these stands can be reclaimed by truing the mast holes in the castings and fitting them with steel bushings.

Referring to rail creepage, the committee said that if unchecked, creepage will quickly distort an entire turnout assembly, throwing it out of line and affecting the gage, particularly at the frog and switch point. The only practicable means of preventing this creepage, it said, is by applying rail anchors, varying the number of anchors used and their location with such factors as whether the turnout is on single or double track; whether it leads to a passing track or to an industrial spur; the speed at which trains are operated through the turnout and whether the loads are equalized in both directions through the turnouts. Continuing, it said that every effort should be made to see that the application of rail anchors is balanced, for if an insufficient number of anchors is applied away from the turnouts and a surplus through the turnout, the turnout itself must resist the creeping of the main-line rails.

The remainder of the report gave attention to the importance of maintaining proper surface through turnouts, and to a detailed statement of the proper procedure for making a complete inspection of the various parts constituting turnouts. This part of the report contained numerous practical suggestions to insure that there will be minimum possibilities for derailments.

In conclusion, the committee said that keeping constantly familiar with standard maintenance of way rules and their proper applications, and keeping abreast with tried and proved maintenance practices as followed by others, through the reading of magazines and books devoted to the study of track and its maintenance in general, will do much to enable trackmen to attain more

readily the knowledge that is so indispensable to the maintenance of turnouts to that high degree of perfection that is so essential in these days of increasing speeds, longer and heavier train loads, and heavier switch power.

The Programming of Track Work

While the definite programming of track work has always been desirable, it is more important today than ever, according to the report of the committee handling this subject, of which S. J. Hale, assistant superintendent, Norfolk & Western, was chairman. It is well known, the committee said, that successful maintenance requires planning in advance, and the performance of various classes of work at the proper season of the year. Any foreman, it continued, will get more work done if he knows how much money he is expected to spend and if he knows that the quantity and unit cost of his work are going to be checked by his supervisor.

In order to permit adequate planning, the committee said that it is of paramount importance that a definite sum for maintenance expenditures be allotted prior to the beginning of the year, the amount of the proposed expenditure to be based upon the results of a personal inspection of a property by the chief maintenance officer and his subordinates. This inspection, it pointed out, will indicate the necessity for the major work to be performed, such as new and relay rail, ties, ballast, rail end and frog and switch welding, and such roadway work as ditching, banking, cleaning and mowing.

Regular section allowances should be made on a monthly basis, according to the committee, the amounts to be based on the recommendations of the roadmaster and checked by the chief maintenance officer, who should determine the amount of the expenditures necessary for each month, giving consideration to the needs in the light of prospective earnings. The roadmaster, it pointed out, should be allowed a definite number of section foremen and section laborers for each month, and he should, in turn, allot the men to each foreman as he may deem necessary to carry out the work programmed.

Concerning the necessity for and the advantages of programming maintenance work, the committee said, in part, as follows:

"It has long been recognized in industry that uniformity in volume of work and continuous operations are essential to maximum efficiency, and that the cost of work increases directly as these factors decrease. From this statement may be developed the fact that lack of uniformity and continuity of work produce greater labor turnover, which results invariably in less efficient work, greater cost per unit of work performed, and a lessened element of safety for the men doing the work.

"The programming of all major maintenance work, such as rail and tie renewals and ballasting, that can be so scheduled, is now all the more necessary since many roads have invested large sums of money in mechanical equipment, and employ highly organized mechanized gangs. This is true because the return on investment in this equipment varies directly with the use which is made of it." According to the report, the programming of track work is highly essential to the maximum efficiency of the larger mechanized gangs being employed today, and enables work to be done with less interference with traffic.

In another part of the report the committee discussed the manner in which field information should be collected, as the basis for recommendations for expenditures, and the studies which should be made by maintenance officers in the definite programming of their work after expenditures have been authorized. The remainder of the report included recommendations concerning the programming of the principal items of maintenance work, including rail laying, track surfacing, tie renewals, smoothing and lining, ditching and repairing roadbed, mowing right-of-way, general cleaning of roadway, and miscellaneous work. In conclusion, the committee pointed out that it is very difficult to formulate an iron-clad program of budget allotment that will be applicable in all cases owing to varying climatic conditions, policies of the different carriers, and the constant changes in economic conditions, but said that a great deal can be accomplished by the budget system for maintenance expenditures and by the unrelinquished efforts of maintenance officers to plan and carry out definite maintenance programs.

Discussion

The discussion emphasized the desirability of a thorough investigation by division and higher officers of work to be done on every section, consulting the section foreman before determining the items to be included in the schedule of work for the following year.

Methods of Instructing Track Men in Safety

The committee reporting on this subject, with F. E. Schaumburg, roadmaster on the Chicago & North Western, as its chairman, discussed in some detail all of the factors which have an influence on the safety practices of track men. At the outset, it said that of first importance in securing satisfactory results in accident prevention work is that all supervisory officers shall be in sympathy with the safety movement. Unless this prevails, it said, it will be most difficult, if not impossible, to instruct or interest men in safety, no matter what methods are used. One of the first essentials to a good teacher in safety, according to the report, is that he practice what he preaches. Therefore, it pointed out that when supervisory officers attempt to teach and instruct their men in safety, it is up to them to live up to all safety instructions to the letter if they are to be successful in their teaching efforts.

Commenting upon the action which should be taken in the event of an accident, the committee pointed out that each accident should receive the immediate attention of the roadmaster, reporting in the manner prescribed on his road to his superior officer. Following an investigation of the accident, with the issuance of instructions, it said that the roadmaster should go over the instructions personally with his men, and, wherever possible, should demonstrate how the accident occurred, and what could have been done to prevent it.

Discussing the merit award system for safety used by a number of roads, in which foremen receive recognition for good safety records through the issuance of safety merit cards and signs for installing on tool houses, the committee reported that track men have shown a great deal of interest in this system, and that where employed, the members of the gangs do everything in their power to secure their first card and sign, or to maintain a clean record already established.

Concerning the practice of some roads which require employees to report violations of safety instructions on a form printed for that purpose, the committee found that while the system has done much good in eliminating unsafe practices, it has not been as much of a success

as was at first expected. If this system is used, the committee pointed out, it should be used for safety purposes only, and not for actual discipline; employees in one department should issue violation report cards only against employees in the same department; and the cards should not be issued in the manner of a threat since the whole safety structure is built around the plan of protecting the individual against injuring himself or his fellow worker.

With reference to making surprise checks in the field, the committee said that while these checks may seem a bit harsh, they have brought about unusually good results in many cases. After pointing out several examples in this regard, it cautioned that in making such checks, the roadmaster must be careful, not to be too harsh in his correction of some improper action on the part of the gang, in order not to make the men feel that in the future they should keep an eye open for him rather than keep their minds on their work.

In another part of the report, the committee stressed the importance of care in the selection of new men to insure that they are physically fit, and also the importance of thoroughly tutoring these men in safe methods and practices. If any new man is found to be indifferent to these teachings, the committee said that he should be removed from the service. After new men have been thoroughly instructed in safety, it was pointed out, they should be given the closest supervision by both foremen and roadmasters to correct any mistakes made and to impress them with the importance which the railroad attaches to safety. This same degree of supervision should be extended to the more experienced men in the gang as well, according to the committee, it being pointed out that men long in the service become injured frequently by reason of working too mechanically and gaining the impression that they are immune to injury.

Supervision should not be hard and abusive, according to the report, but should be firm and friendly. The men, the committee said, should be made to feel that the supervisor is their friend, rather than to acquire the impression that he is merely looking for a chance to criticize. Good work should be commended as quickly as poor work is criticized, it said, and a supervisor should never correct a man for doing something wrong without telling him how it should be done correctly.

With regard to safety rules, the committee said that these rules should be of a general nature, rather than too specific, and should be designed to apply to such tasks as experience has shown to be the most productive of accidents. They should never be used as a club over the employee for purposes of discipline, the committee said, and the worker should be convinced that safety rules are never more than suggestions that have been prepared primarily for his own protection and that of his family and fellow worker.

Along with a discussion of the practices of roads generally with regard to safety meetings and safety bulletins, the committee emphasized the importance of keeping track men interested in the safety movement by having them turn in recommendations that will tend to correct unsafe conditions. It also gave emphasis to the fact that the men should have a safety lesson daily in some form or other, and that in his personal contact with his men, the roadmaster or supervisor should always leave some safety message with them. The report also gave attention to the importance of proper track tools, and to their proper use in avoiding accidents, stating that roadmasters and foremen should teach their men to use the proper tool for each operation, and that track men should be taught to refuse to use tools in bad condition. In closing its report, the committee stressed the value to the safety movement of higher officers visiting work operations from time to time. These visits on the job may be brief, it said, but they will have the desired results in keeping the men alert and safety conscious at all times.

Discussion

It was emphasized that there should be a change in the methods of safety instruction from the issuance of rules and specific instructions covering action to be taken in general and special cases, and that in the future instruction should follow along the lines of safety principles rather than specific practices and rules. It was also emphasized that safety education should be continuous and not intermittent. It was the general opinion that far more attention should be paid to minor accidents than is being given at present. It has been found, it was brought out, that while it is extremely difficult to get laborers to learn safety rules, they can absorb safety principles.

Locomotive Supervisors Hold Live Meeting

(*Continued from page 517*)

This makes the brake more efficient in the higher speed zones.

It is impossible to maintain at all times absolute uniformity of retardation for every brake shoe throughout a train, and in order to attempt such a condition various weight cars are in some instances braked at different braking ratios. The condition of brake shoes varies and also the condition of wheels, so that even though each shoe has a design of brake gear and a force applied to bring about as nearly as possible shoe pressures proportionate to the weight on wheels, each unit will not retard at exactly the same rate.

Power units present a more difficult problem, because excessive shoe pressures are necessary compared to shoe pressures on the average car, and which increases the difficulty of providing shoe and wheel metals which will withstand the heat generated under somewhat prolonged or frequent brake applications such as are necessary in moderate grade train operation. It is, therefore, necessary under such conditions to favor the power units in the development of shoe and wheel heat in order to prevent intolerable brake shoe and wheel damage. This, of course, necessitates an increased braking pressure upon the train to offset the underbraked weight of the power units. Under such conditions the potential speeds are governed solely by the ability to control trains within distances provided by block signal systems and the capacity of the braking elements to withstand the heat developed.

This report was presented by J. A. Burke, supervisor of air brakes, Atchison, Topeka & Santa Fe. It was also signed by H. I. Tramblie, C. B. & Q., and A. G. Mueller, air brake instructor, Chicago, Rock Island & Pacific.

Discussion

In the discussion of this paper Lawrence Wilcox of the Westinghouse Air Brake Company called attention to the fact that the objective of the entire development of braking high-speed trains is to keep stopping distances from increasing more than in proportion to the square of the speed. He reminded the audience that much more time had been available for making earlier developments

in passenger braking than has been the case in the development of brakes for the modern high-speed trains. This development has all taken place in about two years. This, he said, must be kept in mind when considering the amount yet to be done before a completely satisfactory solution of the present problem is attained.

The entire discussion stressed the importance of the wheel conditions in the high-speed equipment. Brake-shoe pressures of about 12,000 lb. per wheel were stated as about the limit to which the wheel can be practicably subjected. In stopping a train from 104 miles an hour on a 1½-per cent descending grade it was pointed out that the center of the wheel tread soon begins to show red and that the band of glowing metal gradually extends until it covers nearly the width of the brake shoe and becomes the color of molten metal.

C. N. S. & M. Strike Costs Employees Large Sum

THE 51-day-old strike of employees of the Chicago, North Shore & Milwaukee ended on October 6, when service was resumed. Settlement was brought about by the signing of a new contract with the Amalgamated Association of Street and Electric Railway and Motor Coach Employees on October 2 and approval of the contract by the district court on October 4. Under the contract, which will be in effect until May 31, 1939, the old wage base continues in effect for three months, during which time negotiations for an adjustment of the pay scale will be made. However, employees receiving more than 50 cents an hour will take 20 per cent of their wages in receivers' certificates during the first two months of the truce, and 15 per cent in receivers' certificates during the third month. The full wages of those receiving less than 50 cents an hour will be paid in cash during the three months.

Amalgamated will be the sole bargaining agent for all employees, and all workers must be affiliated with this union while the contract is in effect. If, within 30 days after service is resumed, no new wage contract has been agreed upon, the disputed questions are to be submitted to a board of arbitration, which will consist of a representative of the receiver, one of Amalgamated and a neutral person chosen by these two. If at the end of 90 days no new agreement has been reached, the status quo must be maintained until after a new contract has been negotiated, but not after May 31, 1939.

Costly for Employees

Refusal to accept this proposal and wrangling among unions has cost some 1300 employees their pay for 47 days, or approximately $250,000. In addition, it has nearly caused the scrapping of the railroad and the permanent loss of jobs for all of the employees because bond holders urged the court to sell the road soon after the strike occurred.

The factor which actually precipitated the strike and which blocked any settlement was a jurisdictional dispute between Amalgamated and the railroad train service brotherhoods which sought to take from Amalgamated its position of sole bargaining agency. Early in 1938 the Brotherhood of Railroad Trainmen and the Brotherhood of Locomotive Firemen & Enginemen entered upon a campaign to secure members. Their first attempt to terminate the arrangement under which Amalgamated had been the bargaining agent for 19 years, occurred in June when these brotherhoods filed complaints with the National Labor Relations Board and asked that they be certified as the sole collective bargaining agencies for the employees in their respective groups. Amalgamated immediately countered by contending that the Board was without jurisdiction, contending that the railroad is not an interurban electric railroad and is therefore subject to the Railway Labor Act. By this move the determination of the sole bargaining agency was blocked, for according to law the Interstate Commerce Commission, upon complaint of any interested party, must hold hearings and determine the status of the railroad, and it is not expected to hand down a decision before January 1. Until its decision is made, the National Labor Relations Board cannot act and the receiver is without right to negotiate with any of the unions as the bargaining agent or agents of his employees.

Not satisfied with this move alone, Amalgamated, on August 15, seven days before the National Labor Relations Board was to hold hearing on these complaints, suddenly took a strike vote by acclamation and announced that a strike was favored by 442 to 6, even though the capacity of the hall was only 300 persons. Later in the same evening, the brotherhoods voted to strike on August 16. At the same time, this division of Amalgamated secured the co-operation of another of its divisions representing elevated railway employees and the latter served notice that it would not permit the operation of North Shore trains in or out of Chicago over the Chicago Rapid Transit Company lines used by the North Shore, unless they were manned by members represented by Amalgamated.

As a result of these moves, the operation of the railroad could only be resumed if a contract were made with Amalgamated. The brotherhoods agreed to discuss a contract, providing their members would not be forced to become members of Amalgamated; providing the contract would not be for a period beyond May 31, 1939; and providing it would be set aside if the decision of the National Labor Relations Board favored them. The first of these conditions was ignored in the final contract, and objections by the brotherhoods at the court hearing for approval were not entertained. Because this Board had declined to make a decision, the receiver was permitted by law to enter into a contract with Amalgamated.

That the employees were ill-advised by their leaders is indicated by the financial condition of the road prior to the strike. It has paid no dividends and no interest on its bonds, including its equipment trust certificates, since 1929, and has been in receivership since September 30, 1932. For the year ending December 31, 1937, its operating revenues amounted to $4,091,723 and its operating expenses to $4,088,858. Its operating loss after taxes amounted to $221,020. Including interest charges on its funded debt, the net loss for the year was $1,179,766. Its accumulated deficit at the end of the year was $8,163,638. Of its funded debt of $20,265,076, $6,377,313 is past due while $301,650 matures in 1938.

The average daily gross revenues from January 1 to May 31, 1938, were only $11,561, and for June, $10,642. The receiver's operations showed a net loss of $25,000 per month, exclusive of depreciation when the strike was called. On June 30, total current assets amounted to $600,804 and current liabilities to $1,128,923.

It was because of this financial record that the receiver, with the approval of the court, recommended a 15 per cent reduction in wages (15 per cent of a monthly payroll of approximately $162,000 being $24,300 a

month), or the equivalent of the net loss of $25,000 reported by the receiver. In his application to the court he pointed out (1) that there has been a marked and progressive decline in revenues; (2) that he has no available reserves to offset the mounting deficit in operations; (3) that operations cannot continue in the face of present earnings unless the cost of operations is reduced; (4) that there must be a reduction in wages to insure continued operation; and (5) that a 15 per cent reduction in wages is necessary and reasonable.

Doubtful If Traffic Will Be Regained

By not heeding this warning, employees have lost more than they can ever gain back. In the first place, they have lost all their wages since August 16, whereas if they had continued to work, the difference between the new wage and the old would have been small in comparison with the amount already lost. In the second place, by striking, they have driven to competing lines the traffic by which their wages are paid, with the result that now, after people have established new habits of shipping and traveling, it is doubtful whether the North Shore will ever regain a large portion of its patrons.

The seriousness of the competitive situation in the territory served by the North Shore is indicated by the fact that the territory served by this railroad is also served by the Chicago & North Western and the Chicago, Milwaukee, St. Paul & Pacific. While the North Shore operates between Chicago and Milwaukee, Wis., its lines do not enter Chicago and it operates from Evanston, Ill., into Chicago over the elevated lines of the Chicago Rapid Transit Company.

The North Shore depends to a great extent upon its passenger business—traffic which has been declining and which is retained with difficulty because of the modern equipment and fast schedules recently installed on the steam railroads and the increase in bus, truck and private automobile competition. Most of its passenger business consists of (a) inter-city travel between localities adjacent to Chicago and necessitates the operation of frequent trains and (b) through service between Chicago and Milwaukee. Its freight business is entirely l. c. l., mostly between Chicago and Milwaukee.

Extension of Rail-Motor Co-ordination Vetoed

THE Interstate Commerce Commission, Division 5, on September 24, denied the application of the Union Pacific, the Chicago, Burlington & Quincy, and the Chicago & North Western for authority jointly to acquire control of the Union Transfer Company.

The Union Transfer Company operates, pursuant to pending "grandfather" application, as a motor-vehicle common carrier of freight over approximately 2,500 route miles in Illinois, Iowa, Minnesota, and Nebraska, generally between Chicago and North Platte, Neb., via Omaha, Neb.; between Omaha and Peoria, Ill.; between Sioux City, Iowa, and Lincoln, Neb.; between O'Neill, Neb., and Fremont; between Norfolk, Neb., and Sheldon, Iowa, and between St. Paul, Minn., and Beaver, Iowa. Other routes are operated between Fairmont, Minn., and Odebolt, Iowa; between Sheldon, Iowa, and Mason City; between St. Paul, Minn., and Colo, Iowa; between O'Neill, Neb., and Sioux City, Iowa; and between Owatonna, Minn., and Eldora, Iowa, via Waterloo, Iowa. The Union Transfer Company also claims "grandfather" rights to haul principally household goods over irregular routes in this general territory.

By joint application filed April 4, 1936, the Union Pacific, the Chicago, Burlington & Quincy, and the Chicago & North Western, jointly sought authority under section 213 of the Motor Carrier Act, 1935, to acquire control of the Union Transfer Company of Omaha, Neb., by purchase of its entire capital stock for $150,000. Intervening petitions were filed on behalf of the Chicago, Milwaukee, St. Paul & Pacific, several motor carriers, certain civic and traffic organizations, and two trucking associations. The Milwaukee and two motor carriers opposed the application, but offered no evidence. An examiner was appointed, a hearing was held, and briefs were filed. The examiner recommended on October 31, 1936, that the acquisition be approved and authorized. Exceptions were filed by the protestants to the order recommended by the examiner, the applicants replied, and the case was argued orally. The conclusions of Division 5 differ from those recommended by the examiner.

Division 5 stated its findings in the matter of its authority in this case in the following words: "Conceivably situations might arise where such a joint venture would promote the public interest, and, in our opinion, determination of whether or not proposed transactions which are reasonably within the meaning of section 213 (a), (*of the Motor Carrier Act—Ed.*), meet the statutory proof requirements, was intended by Congress for our determination in appropriate proceedings."

In denying the application, the position advanced by Division 5 in the so-called "Barker" case, (Pennsylvania Truck Lines, Inc.-Control-Barker, Supra, 5M.CC.9), was reiterated in part as follows: "Approved operations are those which are auxiliary or supplementary to train service. Except as hereinafter indicated, non-approved operations are those which otherwise compete with the railroad itself, those which compete with an established motor carrier, or which invade to a substantial degree a territory already adequately served by another rail carrier. . . . On the other hand, the presumption should be against a highway route which exceeds by more than 20 per cent the rail distance between points of substituted rail service; and, from the standpoint of an applicant railway, an intermediate off-rail point on a permissive route, whatever its direct or indirect character, should not be served if it already is receiving adequate service from a rail or highway common carrier.

Division 5 found that: "The identity of interest of the three railroads is such primarily only in-so-far as would be necessary for this acquisition and subsequent operation of Union. This identity of interest has far more significance when the operations of Union as a motor truck carrier per se are considered, and much of the 'joint venture' aspect would seem lost as to operations of Union auxiliary and supplementary to the train operations of the respective railroads. Each applicant obviously is interested in securing for itself the greatest benefit possible from co-ordinated operations with Union, and these railroads are, to some extent at least, competitors. It is pertinent to observe at this point that in Consolidation of Railroads, 159 I. C. C. 522, embracing a plan for the consolidation of railway properties into a limited number of systems, as required by section 5 of the act, the three railroads here applicants are placed in separate systems.

"It is difficult to see, therefore, notwithstanding the theoretical joint nature of the enterprise, why proof of the utilization by the North Western, for instance, of certain operations of Union to public advantage in its

(North Western) operations, should become applicable to the operations of the Burlington or the Union Pacific to the extent of satisfying the proof requirements in-so-far as the two latter railroads are concerned. There clearly is insufficient community of interest as to the respective railroad operations to warrant such treatment here, and the effect of this arrangement, at least as to the motor truck operations as such, would be to extend the territories served by each applicant into that of each other in proportion to their respective financial interests. Divided ownership and responsibility, particularly where the interests of those in control may be somewhat opposed, often produces poor results. . . . As already indicated, many of Union's routes cannot be said to be parallel to lines of any one of applicants, and the imposition of conditions similar to those in the case last cited (*the Barker case*) would substantially curtail the operations, particularly in Minnesota and northern Iowa. Moreover, counsel for applicants indicated that such conditions here might not be acceptable, and contended that this situation is not analogous in that, while many of the routes serve points not stations on a rail line of applicants, and which are served by other carriers, particularly the Milwaukee, nevertheless they are within territory generally served by one or another applicant.

"In addition to what has been said, there is another objectionable element present here. . . . That portion of the operation which parallels a line of the Burlington, i.e., between Omaha and Peoria, is already served by a motor truck subsidiary of that railroad. Aside from the resulting restraint of competition, it is not apparent wherein additional service for purposes of co-ordination or use by the latter in its operations is needed. . . . This route constitutes a substantial portion of Union's entire operation. If the authority sought were to be granted to the joint applicants despite inability of the Burlington to show that the public interest would be promoted through its use of Union's service to public advantage in its operations, and this route abandoned, the purpose sought to be achieved by the section 213 proviso could be evaded, in-so-far as individual railroads are concerned, merely by joining with other railroads which could, by reason of the physical location of their lines with respect to the routes to be acquired, meet the proof requirements.

"So far as the application now before us is concerned, evidence sufficient to sustain the required statutory findings in connection therewith has not been adduced."

Commissioner Eastman, in a separate concurring expression, stated in part: "The finding required by the proviso to section 213 (a) (1) is that the transaction proposed will 'promote the public interest' by enabling each of the railroads 'to use service by motor vehicle to public advantage in its operations and will not unduly restrain competition.' But even if this finding can be made, we are under no obligation to grant the authority. . . . I believe very strongly in the use of motor trucks in co-ordination with rail operations, and that they can be so used to much advantage in providing a less costly, more flexible, and more convenient service, particularly in the handling of less-carload merchandise traffic. There is evidence here that it would be possible to utilize the services of vendor in this way for the benefit of each of the three railroads and to the public advantage. That the transaction necessarily would 'enable' each of the railroads to use them in this way, however, is not clear.

"I am not satisfied that in the present stage of motor carrier development such an undertaking is consistent with the public interest. It is true that we have power to prevent a motor carrier so controlled from being used to the damage of independent competitors through the establishment of unduly low rates; and it is also true that any damage which might come from superior service can hardly be regarded as contrary to the public interest. Nevertheless, a large motor carrier, backed by the financial resources of three great railroads and by their influence with shippers, presents possibilities of unfair competition which it would be difficult to guard against. The penetration of territory served by other railroads is also to be considered.

"The time may ultimately come for a considerable degree of union between these rival branches of the transportation industry, but I am not persuaded that it has yet come. For the present, therefore, I believe that the emphasis should be on the establishment of co-ordinated truck-rail service rather than on the domination by railroad companies of trucking operations per se."

Emergency Board's Hearings

(*Continued from page 511*)

fill it. During the depression the board reduced officer salaries 10 per cent; also, when other employees went on short time the officers (although continuing on full time) took further reductions corresponding to the cuts which the short time put on other workers. The total reduction in officer salaries was 31 per cent; and the alleged raises mentioned by B. R. T. Counsel Davis, as noted in the foregoing, were in fact restorations of the cuts—there has been no increase generally speaking in officer salaries since 1929, Mr. Clement said. The salary of the P. R. R. president, he added, is now $100,000 a year—$50,000 a year less than the job paid in 1929. And the board of directors has passed a resolution to the effect that officers' salaries will be reduced along with any cut which the employees may take as a result of the present proceeding.

Much of Mr. Clement's testimony on cross-examination was in response to questions from Ray T. Miller, counsel for the Brotherhood of Locomotive Engineers, who sought to make the point that railways require of their employees a higher degree of skill and talent than is the case with other industries. Judge Hay asked a few questions, mainly, he said, because he wanted "to be caught publicly talking to a man who gets $100,000 a year;" also, because he liked to talk to a $100,000-a-year man who "is earning every dollar of it." For his part Mr. Clement was glad to be sitting opposite a lawyer "working for the brotherhoods for that much in six months." When Judge Hay went on to talk about a program of co-operation between management and men, the witness said that he had heard of some disagreement among the labor organizations as to such co-operation.

Dean Landis was interested in the process whereby the railroad executives arrived at the decision to seek a 15 per cent wage cut. Mr. Clement outlined the conferences which preceded the announcement, adding that for his part he thought it would give the industry a "breathing spell" and halt the "slaughter" which has been hitting the employees in the form of lay-offs. He did not know how the 15 per cent figure was arrived at—it was recommended by operating and personnel officers and approved by the presidents. In closing Mr. Clement agreed to Judge Stacy's one-sentence summary of his testimony as being a presentation holding that "the managements of the railroads, considering all the circumstances, including the interests of the institution and the men, have come to the conclusion that in the present crisis the 15 per cent wage cut is the best thing to be done.

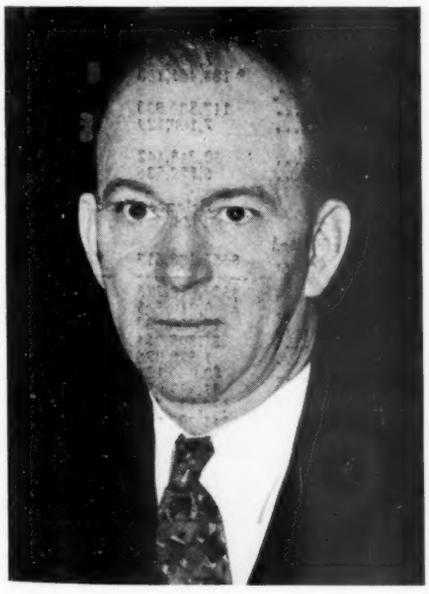
NEWS

Rail Unemployment Insurance Chief

James G. Robinson appointed director of new division of Retirement Board

The Railroad Retirement Board, on October 1, announced the appointment of James Gordon Robinson as Director of Railroad Unemployment Insurance to administer the new Railroad Unemployment Insurance Act which was passed at the last session of Congress. Mr. Robinson assumed his duties on October 3.

Mr. Robinson was chosen for the position after an open competitive examination conducted by the United States Civil Service Commission. The Railroad Retirement Board's announcement says that this examination established a new mark in open competitive federal civil service examinations in that it was the first ever given for as high a position as that of a $10,000 a year administrator.



Harris-Ewing

James G. Robinson

According to the Board's statement, Mr. Robinson has had a long career of experience as a consultant in private management and in public administration, as well as with the actual operation of unemployment insurance laws. His most recent experience in the latter field was as organizer and executive director of the Unemployment Compensation Commission of New Jersey.

Mr. Robinson was born in Pittsburgh, Pa., March 27, 1895. He studied in the United States and abroad, including a period as King's Scholar, Skerrys College, Belfast, Ireland, and as a student teacher in Ireland. He served in the World War as captain and adjutant of infantry in the British army.

The new director's experience includes the following: Consultant to the State of New Jersey on taxation, local government budgets, local government bonds and tax administration, director of several other state and local government studies including reorganization of the City of Louisville, Ky.; the finances and tax system of the State of Ohio, the financing of education in the State of Virginia, reorganization of the State Board of Education and the State Highway Department of the State of Connecticut, preparation of the budgetary procedures for small towns in Connecticut, installation of tax collecting and accounting procedures in the City of Waterbury, Conn., and studies at various times for state or local governments in Missouri, Illinois, Texas, Tennessee, California, Colorado, New York and Kentucky.

Mr. Robinson's experience as an advisor and administrator in government, covers a period of 15 years. During almost the entire period he has been associated with Griffenhagen & Associates, consultants in public administration and finance.

His experience in private business includes the management of various financial operations for the Canadian Bank of Commerce. During this phase of his experience, he worked with the Canadian Northern and the Brotherhood of Locomotive Firemen & Enginemen, and came into contact with railway operations and employment problems.

In an interview with the press after his induction into office, the new director said that his division, which will be a part of the Railroad Retirement Board, would employ about 1,000 persons from Civil Service rolls when the work gets into full swing. He expects to get the necessary machinery set up so that benefit payments can be paid after July 1, 1939. The director will receive claims for unemployment compensation prior to July 1, 1939, but no payments can be made until that date.

The Act, which Mr. Robinson will administer, creates a national pooled-fund system of unemployment insurance for railroad workers. As of July 1, 1939, it withdraws them from the coverage of Title IX of the Social Security Act and the state unemployment compensation acts.

(*Continued on page 534*)

Roads Repair Storm Damage

Most have opened through routes; re-route other traffic; buses used

During the week, New England and lower New York roads made substantial progress in the restoration of lines blocked by the flood and hurricane damage of September 21 and 22. All main routes of the New York Central, Central Vermont, Rutland, Boston & Albany, and Canadian National have been opened for regular freight and passenger service; the New York, New Haven & Hartford and Boston & Maine have almost completed their tremendous rehabilitation jobs, and, are utilizing highway services where gaps in rail lines still remain.

The New Haven, which suffered not only from serious floods in its northerly lines, but also from tidal waves on its important New York-Boston shore line, has made rapid progress in line restoration, while effecting important re-routing schemes to care for traffic on lines still in the hands of roadway forces. Through shore line passengers have been afforded a co-ordinated bus-rail service for over a week; through freight between New Haven and Boston and Providence is being handled eastbound by the so-called "Air Line" via Willimantic, Conn., while westbound shipments are being hauled via Willimantic and Hartford. The Air Line is a single-track, manual block line presenting severe grades on its 54 mile route between New Haven and Willimantic. Ordinarily carrying only one local freight daily, this line, in six days, between 10:20 a. m., when opened for emergency service, and midnight, October 3, carried 3,580 loaded cars eastbound. During the 24 hours of October 3 alone, 23 trains, comprising 891 cars, were hauled up and down its better than one per cent grades. Operation was further complicated by the necessity of limiting trains to 1700 tons with even the largest motive power. The connecting lines from Willimantic to Readville and Providence, respectively, both single track, also presented difficulties in operation; the latter rises 451 ft. in 10 miles and trains routed thereby are limited to 1300 tons.

The eastbound "Owl" between New York and Boston was restored to through service via Springfield on October 4 and it was expected that service via this route would be expanded further. New Haven

(*Continued on page 534*)

I. C. C. Continues Express Hearings

Consolidation service defended by N. Y. executive—Case off until Oct. 10

Further hearings in Ex Parte 126, the express rates case, were held before Commissioners Aitchison, Porter, and Caskie on September 29 and 30. The parties had expected to make this the final hearing, but due to the inability of certain counsel to obtain the necessary data with which to complete their exhibits, the commission found it necessary to continue the hearing before Examiner Hosmer in New York City on October 10.

The two-day session was principally devoted to cross examination and further testimony by one of the owners of the National New York Packing & Shipping Company, Inc., a protestant in the case. A. W. Loebl, one of the owners of the company, which is a large express and freight consolidator in New York City, spent the better part of two days telling the commission what he thought the effects of the proposed express rates would be on his company. He was examined by Morris Ernst of New York, counsel for his company.

In response to a question by Commissioner Aitchison, Mr. Loebl stated he believed that despite the new express charges which the express company proposes to put into effect on packages under 100 pounds, his company would be able to retain about 65 per cent of its present volume of business. He went on to say that he could not be sure how much above the 65 per cent could be retained, pointing out that it would only be on the lighter packages that manufacturers would find it profitable to use his facilities to collect and consolidate small shipments into packages which can take the 100 pound express rate. He also told the commission that the only charge his company makes for consolidating packages is the seven cent charge which includes the cost of collection from the manufacturer. According to Mr. Loebl, such a business as his could only exist in a place such as New York City where dresses and women's ready-to-wear goods are sold to many retailers in small quantities. He defended his company by pointing out that it performs a "sorting job" which the express company would otherwise have to do.

As a result of questioning by Mr. Ernst, the witness said that his company collects small packages from dress manufacturers and assembles all those for one day going to a single destination into one or several packages of 100 pounds or more in order that the 100 pound rate will apply. Then, the express company brings its trucks directly to the package company's headquarters and loads its trucks to capacity without having to pick up packages at several locations in the city. Mr. Loebl contended that this consolidation service saved the express company a sizeable sum of money during the period of a year. Also, he pointed out the fact that the retailers were so satisfied with his service that they demand it of the manufacturer.

In Mr. Loebl's opinion the express company is trying to force his firm out of business by quoting rates low enough to make it unprofitable for his company to operate. It was his contention that the express company would lose money by putting into effect the new proposed rates. Mr. Loebl also presented exhibits which purported to show that the Railway Express Agency would lose $270,029 by not using his consolidation service and adding this figure to the profit which the express company is now making on his company's business, but which, he contends, it would lose under the proposed rates, the net loss to the express company and in turn to the railroads which own the REA, would total $1,041,888.

Testifying for the REA was C. A. Frey, vice president in charge of traffic, who told the commission that his company would

(*Continued on page 534*)

July Has Deficit Of $3,955,405

Compares with a net income of $19,194,965 for seventh 1937 month

Class I railroads reported a deficit, after fixed charges and other deductions, of $3,955,405 in July, 1938, as compared with a July, 1937, net income of $19,194,965, according to the Interstate Commerce Commission's monthly compilation of selected income and balance sheet items. For the first seven months of 1938 the Class I carriers reported a deficit of $184,461,188 as compared with a net income of $58,091,104 for the same period of last year.

Eighty-three roads reported deficits for July, 1938 and 50 reported net incomes; in July, 1937, 61 reported deficits and 72 reported net incomes. The consolidated

SELECTED INCOME AND BALANCE-SHEET ITEMS OF CLASS I STEAM RAILWAYS

Compiled from 136 Reports (Form IBS) Representing 141 Steam Railways

(Switching and Terminal Companies Not Included)

TOTALS FOR THE UNITED STATES (ALL REGIONS)

For the month of July 1938	For the month of July 1937	*Income Items*	For the seven months of 1938	For the seven months of 1937
$38,387,211	$60,985,273	1. Net railway operating income	$109,335,280	$360,451,573
11,552,897	13,497,062	2. Other income	79,892,314	85,068,461
49,940,108	74,482,335	3. Total income	189,227,594	445,520,034
1,915,262	1,622,304	4. Miscellaneous deductions from income	14,199,187	11,931,209
48,024,846	72,860,031	5. Income available for fixed charges	175,028,407	433,588,825
		6. Fixed charges:		
11,086,316	12,926,496	6-01. Rent for leased roads and equipment	73,629,490	87,946,152
39,670,807	39,512,621	6-02. Interest deductions	† 277,277,892	† 278,797,059
210,556	218,210	6-03. Other deductions	1,491,500	1,612,630
50,967,679	52,657,327	6-04. Total fixed charges	352,398,882	368,355,841
* 2,942,833	20,202,704	7. Income after fixed charges	* 177,370,475	65,232,984
1,012,572	1,007,739	8. Contingent charges	7,090,713	7,141,880
* 3,955,405	19,194,965	9. Net income	* 184,461,188	58,091,104
16,907,205	16,359,402	10. Depreciation (Way and structures, and Equipment)	117,820,833	113,866,385
1,395,321	4,063,497	11. Federal income taxes	7,100,129	21,842,030
		12. Dividend appropriations:		
89,329	4,948,675	12-01. On common stock	30,245,142	59,616,200
1,092,585	1,126,883	12-02. On preferred stock	6,572,936	10,924,468

Selected Asset Items	Balance at end of July 1938	Balance at end of July 1937
13. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707)	$655,388,613	$698,713,068
14. Cash	$328,618,975	$446,562,454
15. Demand loans and deposits	9,276,505	12,996,623
16. Time drafts and deposits	18,400,632	41,933,864
17. Special deposits	51,395,064	179,804,536
18. Loans and bills receivable	1,578,986	12,548,260
19. Traffic and car-service balances receivable	50,940,128	59,920,486
20. Net balance receivable from agents and conductors	43,639,050	50,043,664
21. Miscellaneous accounts receivable	130,147,793	142,827,698
22. Materials and supplies	345,392,915	374,831,739
23. Interest and dividends receivable	17,571,654	23,624,830
24. Rents receivable	1,124,455	1,755,553
25. Other current assets	5,399,080	8,031,467
26. Total current assets (items 14 to 25)	$1,003,485,237	$1,354,881,174
Selected Liability Items		
27. Funded debt maturing within 6 months ‡	$117,151,637	$86,576,346
28. Loans and bills payable §	$247,474,787	$211,079,000
29. Traffic and car-service balances payable	71,665,935	83,033,636
30. Audited accounts and wages payable	237,859,398	268,805,551
31. Miscellaneous accounts payable	58,666,246	106,868,947
32. Interest matured unpaid	738,585,482	595,193,749
33. Dividends matured unpaid	1,753,746	6,073,428
34. Funded debt matured unpaid	607,070,795	480,852,589
35. Unmatured dividends declared	996,441	9,702,142
36. Unmatured interest accrued	96,918,330	104,357,265
37. Unmatured rents accrued	26,358,478	27,424,861
38. Other current liabilities	20,637,944	24,493,129
39. Total current liabilities (items 28 to 38)	$2,107,987,582	$1,917,884,897
40. Tax liability (Account 771):		
40-01. U. S. Government taxes	$46,777,906	$109,534,695
40-02. Other than U. S. Government taxes	155,130,281	145,434,995

* Deficit or other reverse items.

† Represents accruals, including the amount in default.

‡ Includes payments which will become due on account of principal of long-term debt (other than that in Account 764, Funded debt matured unpaid) within six months after close of month of report.

§ Includes obligations which mature not more than 2 years after date of issue.

NET INCOME OF LARGE STEAM RAILWAYS WITH ANNUAL OPERATING REVENUES ABOVE $25,000,000

(Switching and Terminal Companies Not Included)

Name of railway	Net income after deprec. For the seven months of 1938	Net income after deprec. For the seven months of 1937	Net income before deprec. For the seven months of 1938	Net income before deprec. For the seven months of 1937
Alton R. R.	*$1,214,427	* $441,997	*$1,014,996	* $236,335
Atchison, Topeka & Santa Fe Ry. System ¶	1,276,745	6,848,711	8,241,544	13,443,604
Atlantic Coast Line R. R.	* 505,148	3,144,319	701,671	4,329,310
Baltimore & Ohio R. R.	*12,241,526	* 353,477	* 7,971,812	3,858,286
Boston & Maine R. R.	* 2,785,369	659,772	* 1,843,157	1,598,366
Central of Georgia Ry.†	* 2,042,178	* 1,012,883	* 1,543,387	* 553,766
Central R. R. of New Jersey	* 2,234,311	* 748,723	* 1,408,486	88,862
Chesapeake & Ohio Ry.	7,569,940	18,686,930	12,412,937	23,498,409
Chicago & Eastern Illinois Ry.‡	* 1,333,830	* 552,373	* 980,301	* 196,826
Chicago & North Western Ry.‡	*12,188,489	*10,063,529	* 9,231,669	* 7,163,806
Chicago, Burlington & Quincy R. R.	* 1,433,233	1,391,917	1,518,875	4,203,063
Chicago Great Western R. R.‡	* 1,397,785	* 796,326	* 1,084,248	* 487,025
Chicago, Milwaukee, St. Paul & Pacific R. R.‡	*13,790,634	* 8,413,227	*10,448,390	* 5,241,637
Chicago, Rock Island & Pacific Ry.‡	* 8,207,478	* 6,052,485	* 5,782,681	* 3,683,165
Chicago, St. Paul, Minneapolis & Omaha Ry.	* 1,966,461	* 2,022,116	* 1,623,257	* 1,676,131
Delaware & Hudson R. R.	* 927,380	898	* 316,314	620,782
Delaware, Lackawanna & Western R. R.	* 2,833,596	365,037	* 1,391,206	1,834,986
Denver & Rio Grande Western R. R.‡	* 4,700,461	* 4,109,184	* 3,982,833	* 3,440,169
Elgin, Joliet & Eastern Ry.	* 616,140	1,295,286	* 31,407	1,815,099
Erie R. R. (including Chicago & Erie R. R.) §	* 8,332,326	1,394,844	* 6,144,205	3,618,409
Grand Trunk Western R. R.	* 3,600,481	75,595	* 2,946,389	684,238
Great Northern Ry.	* 7,211,975	1,644,353	* 5,041,154	3,756,702
Illinois Central R. R.	* 1,925,299	* 2,012,611	1,861,988	1,639,468
Lehigh Valley R. R.	* 2,446,037	* 690,000	* 1,178,255	628,209
Long Island R. R.	* 1,203,544	* 1,160,684	* 517,380	* 478,030
Louisville & Nashville R. R.	* 876,926	4,464,911	1,650,346	6,891,105
Minneapolis, St. Paul & Sault Ste. Marie Ry.‡	* 4,515,833	* 3,622,711	* 3,798,352	* 2,934,518
Missouri-Kansas-Texas Lines	* 2,624,651	* 619,866	* 1,852,471	70,962
Missouri Pacific R. R.‡	* 9,990,934	* 4,127,911	* 7,436,186	* 1,692,136
New York Central R. R.ø	*19,636,506	6,748,629	*10,250,597	16,095,965
New York, Chicago & St. Louis R. R.	* 2,003,779	1,510,936	* 1,007,946	2,461,542
New York, New Haven & Hartford R. R.‡	* 7,649,849	* 2,871,283	* 5,670,451	* 886,638
Norfolk & Western Ry.	6,409,381	18,339,681	9,317,841	21,113,017
Northern Pacific Ry.	* 7,921,065	* 2,993,298	* 5,942,270	* 1,112,110
Pennsylvania R. R.	* 2,622,633	18,246,406	12,114,554	32,713,454
Pere Marquette Ry.	* 2,551,202	1,284,874	* 1,150,508	2,777,559
Pittsburgh & Lake Erie R. R.	392,523	2,704,555	1,702,550	3,738,046
Reading Co.	429,284	4,791,580	2,260,074	6,599,870
St. Louis-San Francisco Ry.‡	* 8,009,123	* 3,550,056	* 6,186,191	* 1,715,407
St. Louis Southwestern Lines ‡	* 1,135,541	* 698,984	* 772,878	* 348,121
Seaboard Air Line Ry.†	* 4,454,252	* 2,144,459	* 3,263,850	* 1,016,918
Southern Ry.	* 4,115,477	1,573,179	* 2,325,217	3,402,090
Southern Pacific Transportation System ‖	*11,612,034	559,784	* 6,778,750	5,243,212
Texas & Pacific Ry.	228,486	1,511,184	925,659	2,191,367
Union Pacific R. R. (including leased lines)	3,827,361	3,439,885	8,091,683	7,350,932
Wabash Ry.†	* 4,557,487	* 1,246,144	* 3,302,383	2,325
Yazoo & Mississippi Valley R. R.	* 345,196	286,207	* 32,267	570,719

* Deficit.
† Report of receiver or receivers.
‡ Report of trustee or trustees.
§ Under trusteeship, Erie R. R. only.
¶ Includes Atchison, Topeka & Santa Fe Ry., Gulf, Colorado & Santa Fe Ry. and Panhandle & Santa Fe Ry.
ø Includes Boston & Albany, lessor to New York Central R. R.
‖ Includes Southern Pacific Company, Texas & New Orleans R. R. and leased lines. The report contains the following information: "Income reported hereon excludes offsetting debits and credits for rent for leased roads and equipment and bond interest between companies included herein. Interest on bonds of, and rental income from, separately operated solely controlled affiliated companies, whether earned or not, are included in this statement in order that such income credits will offset income debits reflected in the net deficit of such companies. Operations of all separately operated solely controlled affiliated companies resulted in a net deficit of $4,177,389 for the seven months ended July 31, 1938, and $1,764,613 for the seven months ended July 31, 1937, which is not reflected in this statement."

statement and that showing the net income of roads having annual operating revenues above $25,000,000 are given in the accompanying tables.

Status of R. F. C. Loans to Railroads

The Reconstruction Finance Corporation's monthly financial statement as of August 31, 1938, shows disbursements to railroads (including receivers) of $599,857,739 and repayments of $184,929,362.

I. C. C. Authorizes Milwaukee to Be Self-Insurer

The Interstate Commerce Commission, Division 5, has authorized the trustees of the Chicago, Milwaukee, St. Paul & Pacific to act as self-insurer under section 215 of the Motor Carrier Act.

Railroad Engineers to Speak at S. A. E. Diesel Meeting

Diesel engines and Diesel-electric trains will constitute the technical program of the next meeting of the Society of Automotive Engineers, Metropolitan section to be held at the Hotel New Yorker, New York City, on October 13, at 8 p. m. Otto Jabelmann, assistant to president in charge of research, Union Pacific, will describe the work of his road in the design and operation of Diesel-powered trains, while E. E. Chapman, mechanical assistant, Atchison, Topeka & Santa Fe, will cover his road in the same manner. In the discussion to follow, W. H. Mussey, engineer of research, Pullman-Standard Car Manufacturing Company, and Col. E. J. W. Ragsdale, chief engineer, Stainless Steel Division, Edward G. Budd Manufacturing Company, will discuss modern car design. Motion pictures of Diesel operation will be shown by the General Motors Corporation at the close of the meeting.

A. F. of L. Union Certified on S. P. Boat Line

The National Labor Relations Board has certified the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express & Station Employees, as the sole bargaining agency for operating department employees at the Galveston, Texas, terminal of the Southern Pacific Steamship Lines, also known as the Morgan Lines.

Board action was based upon a comparison of union membership cards with company payroll of May 16 to 31, disclosing that 22 of the 35 employees in the appropriate unit designated the union as a bargaining agency. Authenticity of the cards was established at a public hearing on the representation question held at Galveston on June 30.

Rivers and Harbors Allotments

Secretary of War Harry H. Woodring has made the following allotments of funds for rivers and harbors work: New York and New Jersey channels, $347,000; Ohio River open channel work, $258,000; and Humboldt Harbor and Bay, California, $65,000.

Tariff Suspended

The Interstate Commerce Commission has suspended from September 30, until April 30, 1939, proposed increases in rail rates on refined petroleum lubricating oil, in carloads, from points in Central Freight Association and Trunk Line territories to destinations in Western Trunk Line territory.

I. C. C. Makes Promotions in its Bureau of Service

E. H. DeGroot, Jr. has been appointed director of the Interstate Commerce Commission's Bureau of Service according to an announcement made by the commission on October 5. At the same time Homer C. King was named to succeed Mr. DeGroot as assistant director of the Bureau.

Roads Are Granted Fourth Section Relief

The Interstate Commerce Commission, Division 2, has authorized the Baltimore & Ohio, the Chicago, Rock Island & Pacific, the Missouri-Kansas-Texas, the Missouri Pacific, the St. Louis Southwestern, the St. Louis-San Francisco, and the Louisville & Nashville to establish and maintain round-trip passenger fares from Louisville, Ky., and New Albany, Ind., to points in Arkansas, Louisiana, Oklahoma, Texas, New Mexico, and Mexico, without observing the long-and-short-haul provisions of section four of the Interstate Commerce Act.

Taxes Down, Fares Up, on French Railways

The French National Railways has increased its passenger fares by applying a surcharge rated on a sliding distance scale which is expected to produce about 375 million francs ($9,125,000) in additional revenue annually.

This move was made principally to insure an increase in annual receipts on which was contingent the government's promise to lower the rate of direct taxation on passenger revenues. By reason of the fare rise, the French Government has decreed the removal of a 13 per cent tax on main line traffic and 8.7 per cent on

branch line traffic and, in place of these suspended levies, has ordered a new tax on all passenger receipts of 2.2 per cent.

The system has also announced an increase in freight rates on bulk shipments moving on slow trains, to be effective October 1.

Kansas Intrastate Rates

Railroads operating in Kansas have asked the Interstate Commerce Commission to eliminate livestock rates from its investigation of the Kansas State Corporation Commission's refusal to permit the application of the Ex Parte 123 increases to intrastate shipments. The petition said that the Kansas Commission has allowed the livestock increases.

Mexican Railroad and Bus Agreement

An agreement has been reached by the representatives of the Workers Administration of the National Railways of Mexico and the Confederation of Bus Services, whereby rates, timetables and other matters of joint concern are to be regulated. It was agreed that no further services shall be established by either railroads or buses in zones already served by the other, with the view of avoiding wasteful competition. It was also decided to request the Department of Communications not to issue further permits for bus operations on highways now served.

Side Frame Welding Rule Extended

The Board of Directors of the Association of American Railroads has extended to January 1, 1940, the effective date of revisions of Interchange Rule 3, Sec. t-3, Rule 19 and Rule 23, Sec, *II, III,* and *IV,* which revisions are contained in Supplement No. 2 to the 1938 Code of Interchange Rules, and are designed to prohibit the welding of L- and T-section cast steel side frames when such frames fail.

Weather Reports for Passengers

Because there is often a wide range of temperature between Chicago and New Orleans, the Illinois Central has introduced a practice of giving each passenger on its Panama Limited a report on the weather at destination so that he may dress accordingly upon arrival. The service is handled by the stewards in charge of the dining cars, and weather reports received by telegraph en route are attached to menu cards at breakfast.

Club Meetings

The Central Railway Club of Buffalo will hold its next meeting on October 13 at 8:00 p. m., in the Hotel Statler, Buffalo, N. Y. Papers will be presented by George S. Fanning, chief engineer, Erie, at Cleveland, Ohio, entitled "Modern Railroad Maintenance Practices," and by Edward J. Cullen, chief engineer of the Lehigh Valley, Bethlehem, Pa., entitled "Problems of the Maintenance of Way Department Today." There will be discussions by W. H. B. Bevan, division engineer, Canadian National, Montreal, Que.; E. W. Hammond, division engineer, Baltimore & Ohio, Rochester, N. Y.; H. I. Hoag, division engineer, New York Central, Buffalo, N. Y.; A. A. Johnson, engineer maintenance of way, Delaware, Lackawanna & Western, Hoboken, N. J.; and J. S. Snyder, division engineer, Pennsylvania, Buffalo. The Central Railway Club chorus will entertain.

The New England Railroad Club will hold its next meeting on October 11 at the Hotel Touraine, Boston, Mass. At that time Fairman R. Dick, member of Dick & Merle-Smith, New York investment firm, and former advisor on finance and credit to the Association of American Railroads, will speak on the topic "The Modern Sisyphus."

Soo Line Locomotives—A Correction

In the description of the Soo Line locomotives beginning on page 483 of the October 1 issue of the *Railway Age* it is incorrectly stated that "the cab equipment includes a Vapor steam-heat regulator." The regulator is of the Leslie type.

Would Permit Greyhound Companies to Issue Stock

Examiner William L. Fulton of the Section of Finance, Bureau of Motor Carriers of the Interstate Commerce Commission, in a proposed report to the commission, would have it authorize several units of the Greyhound system to issue varying amounts of common stock without par value to repay, or refund indebtedness. Included are: Pennsylvania Greyhound Lines, Inc., $399,600; and Southwestern Greyhound Lines, $150,700.

Eastern Carriers File Reduced Rates for Export Train

The Interstate Commerce Commission on October 1 granted the eastern carriers permission to file on not less than 20 days' notice new schedules putting into effect reduced grain rates on export traffic. At the same time the eastern carriers filed with the commission new schedules which will reduce export grain rates from Chicago, Peoria, Ill., and St. Louis, Mo., to North Atlantic ports by six cents per 100 lb. from present rates. The new rates will become effective on October 21.

Retirement and Other Accounts

Government securities aggregating $69,700,000 were held in the Railroad Retirement Account on August 31, according to an October 1 statement in which Secretary of the Treasury Morgenthau listed the government and other securities held in governmental trust accounts and by governmental corporations and agencies. On the same date there were $502,000 of government securities in the Alaska Railroad Retirement and Disability Fund, while, according to the "latest available figures," the Inland Waterways Corporation held $3,487,000 in government securities.

Denies Application for Authority to Build Pittsburgh-Harrisburg Line

The Interstate Commerce Commission, Division 4, has denied the application of Roy Greene for authority to construct a line of railroad extending from Pittsburgh, Pa., to Harrisburg, 203 miles. Mr. Greene, in his individual capacity, proposed to construct and operate a high speed Diesel-electric freight and passenger line between these two points, using the partially constructed roadbed of the old South Penn. Division 4 found that there was no public need for such a line and that the applicant had shown no evidence of having sufficient funds or financial backing to undertake such a project.

R. B. A. Dinner November 16

The Railway Business Association will hold its thirtieth annual dinner at the Commodore Hotel, New York, on November 16. Under a plan initiated this year, each member company will be limited to five seats for its membership, with one additional seat for each additional membership. Under this plan it is expected that the attendance will be limited to 1500 persons.

The program for the day calls for a meeting of the governing board at 10:30 a. m., the annual meeting and luncheon at 1:00 p. m., reception and cocktails in the foyer at 6:45 p. m., and the dinner at 7:15 p. m.

Equipment Depreciation Orders

Equipment depreciation rates for eight railroads, including the Akron, Canton & Youngstown, have been prescribed by the Interstate Commerce Commission in a new series of sub-orders and modifications of previous sub-orders in No. 15,100, Depreciation Charges of Steam Railroad Companies. The composite percentages, which are not prescribed rates, range from 3.37 for the Cheswick & Harmar and the Sumpter Valley to 9.05 for the St. Joseph Terminal. The A. C. & Y.'s composite figure was 4.03.

The A. C. & Y.'s prescribed rates are as follows: Steam locomotives, 3.55; freight train cars, 5.69; passenger train cars, 3.83; work equipment, 3.61; and miscellaneous equipment, 17.96.

Port-to-Port Water Rates of Rail Affiliates

The Interstate Commerce Commission has issued an order calling upon the Southern Pacific and the Ocean Steamship Company to show cause at a Washington, D. C., hearing on October 26, why there should not be a withdrawal or cancellation of outstanding orders authorizing those companies to change on one and two days notice the rates on their steamship lines operating between South Atlantic and Gulf of Mexico ports and North Atlantic ports. The outstanding orders in question permit the Southern Pacific to change rates on any or all commodities on one day notice; while the Ocean Steamship Company is now able to change rates "on certain specified commodities" on not less than two days notice.

The commission's order reopening the cases says that since the outstanding orders were issued changes have occurred "in competitive and other conditions" with respect to the all-water traffic involved. Among such changes there is cited the Merchant Marine Act's provision requiring common carriers by water to file their tariffs with the United States Maritime

Commission, giving 30 days notice except where short-notice authority is obtained from that commission.

Welding Society to Meet in Detroit

The American Welding Society will hold its annual meeting in the Book-Cadillac Hotel, Detroit, Mich., on October 16-21, with P. G. Lang, Jr., engineer of bridges of the Baltimore & Ohio, and president of the society, in charge. Among the sessions at which the specialized problems of various industries will be presented is a railroad session on Friday forenoon, October 21. At this session, over which H. C. Boardman, Chicago Bridge & Iron Company, and Elmer T. Howson, *Railway Age*, will preside as chairman and vice-chairman, respectively, A. M. Unger of the Pullman-Standard Car Manufacturing Company will speak on the truss-type railroad car; H. C. Drake of Sperry Products, Inc., will speak on the flash welding of rails; and W. D. Murray, general foreman of the Steel Foundry Division of Canadian Car & Foundry, Ltd., and H. E. Horwood of Railway & Engineering Specialties, Ltd., will speak on machine gas cutting in a large steel foundry.

Frisco Would Buy Truck Lines

The Frisco Transportation Company, affiliate of the St. Louis-San Francisco, has applied to the Interstate Commerce Commission for authority to purchase two trucking companies—the J. W. Barker Truck Line of Blytheville, Ark., and Tolson's Transfer of Walnut Ridge, Ark. The railroad affiliate would pay $4,000 for the former, which, the application says, parallels the Frisco's rail lines in such a way that co-ordinated operations could be effected between Memphis, Tenn., and Blytheville and such other Arkansas points as Osceola, Marked Tree and Jonesboro. Likewise, Tolson's Transfer, which would be bought for $3,000 would permit co-ordination between Memphis and Pocahontas, Ark., Walnut Ridge, Jonesboro, Truman, Marked Tree and Turrell.

In both cases separate applications were filed asking the commission to grant the Frisco Transportation Company temporary authority to operate the vendors' lines, pending action on the above.

Research on Rail and Boiler Water to Continue

Cooperative programs of research on steel rail and the treatment of boiler water, now under way, will be continued as a result of action on September 30 by the Board of Directors of the Association of American Railroads, it was announced by J. J. Pelley, president.

The steel rail research, carried on jointly for the past seven years by railroads and steel manufacturers, is conducted at the University of Illinois and in the field. Progress has been made toward the manufacture of tougher and stronger steel rail as a result of these experiments, it was reported. The research work is to be continued for two more years.

The research to improve methods of treating boiler feed water, conducted jointly by railroads, other large users of steam boilers, boiler manufacturers and insurance companies, is now going on at the Eastern Experiment Station of the United States Bureau of Mines at College Park, Md. The immediate purpose of the research is to determine the cause and prevention of intercrystalline cracking of boiler shells. It is believed that the work will be completed in another year.

Airplane Accidents

American-operated air carriers flew 1,844,507 miles per accident and 13,161,571 passenger miles per passenger fatality during the first six months of 1938, the Civil Aeronautics Authority announced on September 15. There were 5 fatal accidents during the period, in which 22 passengers, 5 pilots, 5 copilots, and 8 other crew members lost their lives. In addition there were 16 accidents in which no fatalities occurred.

These statistics cover operations of all air carriers operated by companies in the United States, including the domestic lines and extensions to foreign countries. The domestic lines had 15 accidents, flying 2,209,486 miles per accident, and the foreign-extension lines had 6 accidents, flying 932,061 miles per accident. Persons involved in the 21 accidents occurring on the domestic and foreign-extension lines numbered 226, including passengers, pilots, co-pilots, and other crew members. Of these, 186 suffered no injuries, and 40 were fatally injured.

U. S. Circuit Court Upholds U. P. Bus Subsidiary

The Ninth Circuit Court of Appeals of the United States, in a lengthy opinion by Judge Garrecht, has held that the Union Pacific Stages, Inc., highway subsidiary of the Union Pacific, did not violate the National Labor Relations Act when it discharged two bus drivers for what it alleged to be violation of the rules. The National Labor Relations Board had found that the company had discharged the men for "union activity" and not for infraction of the rules. After its decision, ordering the men reinstated and reimbursed for their back pay, the Board appealed to the United States Circuit Court of Appeals for the Ninth Circuit for an order enforcing the Board's ruling. After a review of the evidence, the court decided that the Board was in error and refused to order the men's reinstatement, but did order that the Board should be permitted to force the company to issue notices to the effect that it did not intend to discriminate against any employee for union activity.

C. & O. Issues "Traveler's Notebook"

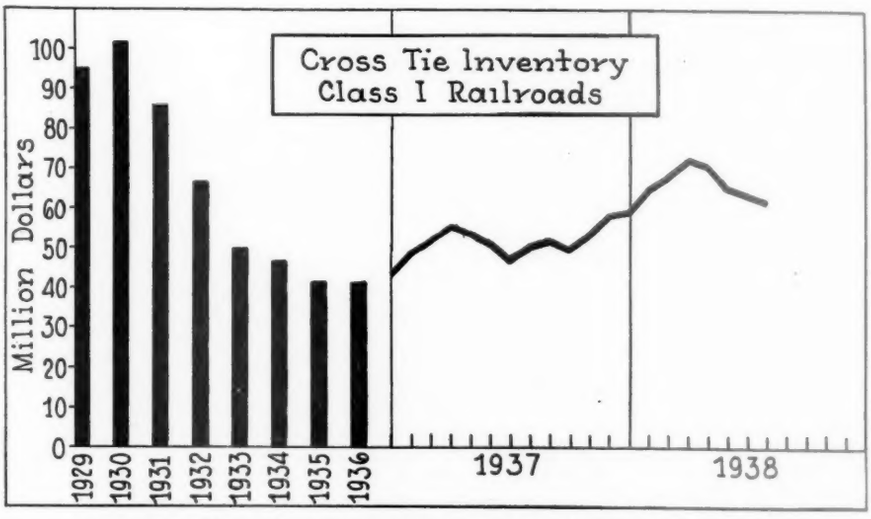
The Chesapeake & Ohio has prepared for public distribution a 40-page, 9 in. by 6 in. booklet entitled "Leaves from a Traveler's Notebook," which describes in a somewhat unusual way the background of the territory along its main routes. According to the foreword, the book is published primarily for patrons to add to their enjoyment of trips on C. & O. lines, referred to familiarly as "The Chessie Corridor."

The notable feature of the booklet is that it divides up the territory described into themes rather than listing point-to-point attractions in timetable order. Thus the Hampton Roads area is handled by the heading "Here American History Began;" Charleston, W. Va., and vicinity is called "King Coal's Capital;" Kentucky points are grouped around the theme "Horse Heaven." The work contains many small photographs, handsomely finished, including a group of 9 showing Chesapeake & Ohio property and rolling stock in use by the military in Civil War days.

Truckmen's Strikes End in New York

A series of truckmen's strikes which ed up almost all urban drayage operaons in New York City and northern New ersey points and reduced "over-the-road" service in the vicinity of the metropolis to a minimum were brought to an end on successive dates late last week and early this week. Interurban truck drivers were the last to return to work, following an agreement with the Highway Transport

* * *



Bar Graph and Line Chart Shows the Trend of Cross-Tie Stocks of Class I Roads, 1929 to August 1, 1938

Association on the evening of October 2. Local drivers in New York returned to work on September 30 and local operations in New Jersey assumed normal proportions on October 1.

A "one-haul-per-day" provision sought by the employees constituted one of the chief points of issue in the long distance truckers' controversy. By October 1 both sides were in agreement on wages, vacations, etc., but the men insisted upon inclusion of a clause in the agreement limiting drivers to one haul daily. Employers refused to agree to such a provision, contending that many trips consume but an hour and that, under the clause, this hour's work would constitute a day's work. Employee representatives, on the other hand, argued that the average trip consumes a full day's work. The final agreement appears to have been drawn up without mention of the controversial clause.

S. A. E. Holds Railroad Meeting

The Chicago section of the Society of Automotive Engineers, in conjunction with the S. A. E. Truck Bus and Railcar division, held a two-day meeting in Chicago on October 4-5, at which Diesel motive power and air conditioning were considered. Approximately two hundred railway and automotive men were in attendance.

The meeting opened on Tuesday morning with the presentation of a paper on Diesel Power in High Speed Railway Service by E. F. Weber, superintendent of automotive equipment, Chicago, Burlington & Quincy. This paper was discussed by A. R. Walker, electrical engineer, Illinois Central; C. B. Cotton, supervisor of motor equipment, Chicago & North Western, L. W. Goodrich, division master mechanic, Atchison, Topeka & Santa Fe; Ernest Kuehn and R. M. Dilworth, Electro-Motive Corporation. On Tuesday evening a paper on Railcars, Streamliners and Buses was presented by W. E. Dunham, general superintendent, car department, Chicago & North Western.

Wednesday forenoon L. J. Verbarg, air-conditioning engineer, Missouri Pacific, presented a paper on the Air Conditioning of Buses, Rail Cars and Railway Coaches. This paper was discussed by L. A. Richardson, Chicago, Rock Island & Pacific; R. I. Fort, Illinois Central; and B. F. Carter, Chicago, Burlington & Quincy. On Wednesday afternoon J. B. Fisher, vice-president, Waukesha Motor Company, presented a comparison of Diesel, Semi-Diesel and Gas Power, and Ralph Leadbetter, chief of research, C. F. Burgess Laboratories, Inc., presented a paper on the Evolution of Air Distribution in Ventilating Systems. The latter paper was discussed by E. P. Marsh, assistant superintendent car department, Chicago & North Western; L. A. Richardson, Chicago, Rock Island & Pacific; and H. O. Mathews, Public Utilities Engineering & Service Corporation. Abstracts of some of these papers will appear in subsequent issues of the *Railway Age*.

On Tuesday afternoon the group made an inspection of the Electro-Motive Corporation's plant at LaGrange, Ill., where the construction of both Diesel engines and Diesel locomotives was observed.

Roosevelt Picks Reed for Retirement Board

Accepting the recommendation of the Association of American Railroads, President Roosevelt, on October 1, appointed M. Roland Reed, formerly superintendent of motive power on the Pennsylvania's Eastern Pennsylvania division, as the carriers' representative on the Railroad Retirement Board for a five year term. Mr. Reed succeeds James A. Dailey whose term expired on August 28. As pointed out in the *Railway Age* for September 3, page 352, Mr. Reed was nominated by the A.A.R., while 137 members of the American Short Line Railroad Association endorsed Mr. Dailey for reappointment.

M. Roland Reed

Mr. Reed was born July 26, 1883, in Newton, Ill., and was graduated from Rose Polytechnic Institute in 1905 with a B.S. degree in mechanical engineering. Meanwhile he had entered railroad service during school vacations as a laborer in the Terre Haute (Ind.) shops of the Pittsburgh, Cincinnati & St. Louis (now P. R. R.). After graduation he returned to those shops to serve for a few months as a signal repairman before becoming a special apprentice in the Union Pacific shops at Omaha, Nebr. Mr. Reed came back to the P. C. & St. L.'s Terre Haute shops as a draftsman in September, 1906, serving in that capacity for one year, and thence for two years as assistant foreman. He was chief draftsman from 1909 to 1917, and general car inspector on the Pennsylvania's Northwest System during the next two years. From 1918 to July, 1926, Mr. Reed was successively superintendent of car repairs, master mechanic on the P. R. R. Eastern and Logansport divisions and assistant general superintendent of motive power for the Northwest region. During 1926-28 he was acting master mechanic and master mechanic on the Fort Wayne division, after which he became successively superintendent of motive power on the Northern and the Eastern Pennsylvania divisions and general superintendent of motive power for the Central region. He returned to the position of superintendent of motive power, Eastern Pennsylvania division, at Harrisburg in December, 1936.

Freight Car Loading

Loading of revenue freight for the week ended September 24 totaled 675,553 cars, an increase of 15,411 cars or 2.3 per cent above the preceding week, but a decrease of 161,332 cars or 19.3 per cent below the corresponding week in 1937 and a decrease of 277,008 cars or 29.1 per cent below the same week in 1930. All commodity classifications except live stock and ore showed increases over the preceding week, while all commodity classifications except grain showed decreases under last year. The summary, as compiled by the Car Service Division, Association of American Railroads, follows:

Revenue Freight Car Loading

For Week Ended Saturday, September 24			
Districts	1938	1937	1936
Eastern	130,669	163,840	159,315
Allegheny	117,747	162,934	162,081
Pocahontas	49,451	58,126	57,172
Southern	106,345	117,642	112,412
Northwestern	99,633	138,205	131,364
Central Western	114,120	127,818	120,092
Southwestern	57,588	68,320	64,807
Total Western Districts	271,341	334,343	316,263
Total All Roads	675,553	836,885	807,243
Commodities			
Grain and Grain Products	39,985	35,832	33,667
Live Stock	16,527	21,204	19,321
Coal	130,350	156,179	142,808
Coke	6,243	10,855	9,920
Forest Products	32,022	39,090	37,117
Ore	27,094	65,728	58,604
Merchandise l.c.l.	157,171	173,406	172,347
Miscellaneous	266,161	334,591	333,459
September 24	675,553	836,885	807,243
September 17	660,142	822,795	789,857
September 10	568,887	708,202	700,147
September 3	648,039	801,539	765,131
August 27	620,511	783,476	754,097
Cumulative Total, 38 Weeks	21,447,861	28,302,089	25,639,707

In Canada.—Car loadings for the week ended September 24 totaled 60,812, as compared with 63,539 last year and 56,609 in the preceding week, according to the weekly statement of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
Sept. 24, 1938	60,812	18,870
Sept. 17, 1938	56,609	20,298
Sept. 10, 1938	51,820	17,536
Sept. 25, 1937	63,539	24,061
Cumulative Totals for Canada:		
Sept. 24, 1938	1,722,659	765,021
Sept. 25, 1937	1,887,057	1,007,256
Sept. 19, 1936	1,729,187	869,197

Car Men Elect Officers

At the two-day annual meeting of the Car Department Officers Association held September 27-28 at the Hotel Sherman, Chicago, the following officers were elected for the ensuing year: president, C. J. Nelson, superintendent of interchange, Chicago Car Interchange Bureau, Chicago; first vice-president, W. E. Dunham, general superintendent car department, Chicago &

North Western, Chicago; second vice-president, J. S. Acworth, superintendent of equipment, General American Transportation Corporation, Chicago; third vice-president, A. J. Krueger, superintendent car department, New York, Chicago & St. Louis, Cleveland, Ohio; fourth vice-president, E. S. Smith, master car builder, Florida East Coast, St. Augustine, Fla.; and secretary-treasurer, F. L. Kartheiser, chief clerk, mechanical department, Chicago, Burlington & Quincy, Chicago.

The following directors were also elected: H. H. Urbach, mechanical assistant to executive vice-president, Chicago, Burlington & Quincy, Chicago; C. Claudy, master car builder, Grand Trunk Western, Battle Creek, Mich.; P. P. Barthelemy, master car builder, Great Northern, St. Paul, Minn.; S. O. Taylor, master car builder, Missouri Pacific, St. Louis, Mo.; J. M. Brophy, superintendent car department, Illinois Central, Chicago; H. H. Golden, superintendent A. A. R. interchange and accounting, Louisville & Nashville, Louisville, Ky.; W. A. Bender, master car builder, Alton, Chicago; G. E. McCoy, assistant general superintendent motive power and equipment, Canadian National, Toronto, Ont.; E. M. Wilcox, assistant superintendent of equipment, New York Central, Chicago; J. E. Keegan, chief car inspector, Pennsylvania, Chicago; C. E. Strain, superintendent car department, Pere Marquette, Grand Rapids, Mich.; John Gogerty, assistant general superintendent motive power and machinery, Union Pacific, Cheyenne, Wyo.; J. P. Morris, mechanical superintendent, Atchison, Topeka & Santa Fe, Ft. Madison, Iowa; J. A. Deppe, superintendent car department, Chicago, Milwaukee, St. Paul & Pacific, Milwaukee, Wis.; O. F. Davisson, superintendent, Armour Car Lines, Chicago; J. J. Root, Jr., assistant to vice-president, Union Tank Car Company, Chicago; J. W. Fogg, vice-president, MacLean-Fogg Lock Nut Co., Chicago; and L. H. Gillick, assistant to vice-president, Vapor Car Heating Company, Chicago.

Atlantic States Board Speaker Urges Rate Revision

Criticism of the present rate-making policies of the carriers and of their freight soliciting procedures was voiced by H. E. Stringer, vice-president, Hydraulic-Press Brick Company, Washington, D. C., as the principal speaker before the Atlantic States Shippers Advisory Board meeting in the Hotel Ten Eyck, Albany, N. Y., on October 4 and 5. After a review of the work of the 13 shippers advisory boards of the country and the nature of their organization, the speaker put forward some suggestions for fundamental changes in the operations of the railroads, which remedies he considered supplementary to those outlined by the Association of American Railroads. He referred particularly to the rate structure, which, he contended, needed general adjustments, many of them in a downward direction.

His major recommendation in this regard was the creation of a twelve-member advisory division by the Association of American Railroads composed of six railroad traffic officers and six agricultural and industrial shippers, whose business it would be to consider the existing general rate structure and to make formal presentations to the A. A. R. and the Interstate Commerce Commission. The second recommendation was that a similar board be created to consider operating policies of the carriers. His third suggestion outlined the idea that the carriers completely overhaul their present traffic solicitation policies and put an end to what he called "order taking."

Mr. Stringer specifically criticized the so-called rate committees, arguing that many shippers have deplored the manner in which they were handling rates and, further, that a number of railroad men have themselves criticized the work of the committees from the inside. His chief bone of contention was that rate committees are not usually acquainted with business conditions in any particular industry. Their main function, he said, seems to be the protection of the rate structure.

The commodity committee of the board predicted a 2.4 per cent decrease in carloadings in the area for the last quarter of the year. Increases were expected chiefly in vegetables, anthracite, lumber and forest products, and automobile parts and accessories. Decreases were expected chiefly in grains, ore and concentrates, crushed stone, sand, gravel and slag. Since compilation of the forecast, the coal committee reports an estimated increase in anthracite alone of at least 10 per cent, based on the belief that dealers as a whole have not stocked up as much as usual. Of 16 large-volume less-carload shippers reporting from ten key cities throughout the board area, all but one report anticipated increases in l.c.l. business ranging from 5 to 20 per cent. A number of those reporting stated that, "while it is generally agreed there will be an increase in less-carload freight traffic, it may not show up in the railroads' figures of tonnage moved, inasmuch as a considerable volume will move by highway and truck."

Norris Addresses Illinois Chamber

The "railroad problem" is usually discussed as if it were merely a problem of and for the railroads, but it is not just a "railroad problem." It is an unsolved national transportation problem, so E. E. Norris, president of the Southern, told the Illinois Chamber of Commerce meeting in Chicago on October 5.

"Our railroad difficulties are simple enough," he said. "The causes of those difficulties are plain enough, too, for those who will pause and consider. Railroad difficulties are not due to any inherent defect in the rail method of doing business. Railroads made possible the settlement and civilization of this continent. They are today carrying the major part of the commerce of this country for an average of about one cent for moving a ton of freight one mile—an average far below that of any other form of transportation.

"Rail difficulties are not due to deterioration of service, for the service today is faster, safer, more dependable, better all around, than it was in the years of the greatest railroad prosperity.

"Rail difficulties are not due to a decline in efficiency, because by every indication they are more efficiently operated than ever before. The mass output per hour of transportation service by freight trains, less than 20 years ago, averaged around 7,000 ton miles. Last year it averaged nearly 13,000 ton miles. I know of no industry which has made greater gains in the efficiency of its operations, but it is essentially a utilitarian industry and hence, perhaps, lacks some of the appealing colorfulness of other enterprises.

"Rail difficulties are not due to an increasing burden of capitalization, contrary to much loose talk on that subject, for it has not increased. In the years of railroad prosperity, 25 or 30 years ago, stocks and bonds together amounted to $987 for each thousand dollars invested in railroad property. Last year they amounted to $721.

"Rail difficulties are not due to an increasing burden of debt. In the years of railroad prosperity, railroad debt amounted to about 60 cents for each dollar of investment. Last year's debt amounted to only 44 cents for each dollar invested.

"Neither are rail difficulties due to an increase in the burden of fixed charges, as compared with their revenue. In 1937, fixed charges, which is interest paid or due on the bonds representing money which somebody saved and invested in railroad plant and equipment—amounted to 15.3 cents out of each dollar of rail revenue. That was less than in any of the years of our greatest prosperity.

"From the standpoint of service, efficiency, physical structure, or financial structure, railroads are sounder today than they were in those earlier years when they were most prosperous—and yet today they are in a desperately critical condition.

"The last year in which the railroads as a whole earned as much as five per cent of the money invested in them was in 1916. Last year the railroads handled almost the same amount of business as they did in 1916, and handled it far better, largely because of improved plant and methods made possible by the investment of millions of dollars of new capital since that time. But here is what has happened since then: Railroad wages have more than doubled, whether they are calculated in cents paid for each hour worked, or in dollars earned each week or each year, and the burden of railroad taxes has more than doubled. Then, too, there have been substantial increases in the prices of almost everything railroads must buy and use. But the revenue railroads receive for hauling a ton of freight a mile is only about one-third more than it was in 1916, and the revenue for carrying a passenger a mile is actually less than it was at that time.

"That is why I said at the outset, that the so-called 'railroad problem' is not to be solved by merely giving attention to the railroads alone. The situation is quite beyond railroad management control. It is a matter of public transportation policy. That policy, for a long period of years, has tended to focus itself upon the rates of railroads, with slight attention to the added elements of cost imposed upon those

same railroads by much of our legislation and administrative regulation.

"The railroad industry itself has offered a realistic program which, in its judgment, will meet the situation. It is not and cannot be a one-point program, for there is no one sovereign remedy for all that ails us, but the conclusions upon which it is based can be boiled down to one statement:

"Let the railroads be run as a business the same as your business, with reasonable freedom to price their product, to adjust their facilities and services to business needs and their expenses to their necessities. And give them fair and relatively equal conditions of competition and regulation with all other agencies of transportation."

Rail Unemployment Insurance Chief

(*Continued from page 527*)

Contributions and benefits do not become payable until July 1, 1939. Contributions will be made by covered employers at the rate of three per cent of wages, excluding any amount in excess of $300 per month payable to any employee.

To become eligible for benefits an employee must (1) have earned $150, or more, from covered employment within the appropriate preceding calendar year and (2) have had, within six months preceding the beginning of a benefit year, a waiting period of fifteen consecutive days of unemployment, or two half months in each of which there were eight days of unemployment.

Employees will be disqualified from the receipt of benefits for varying periods for such reasons as refusal to accept suitable work, voluntarily quitting work without good cause, discharge for misconduct, and other reasons.

Benefits, computed on a daily basis, will range from $1.75 to $3 per day in accordance with the amount earned during the base year. The maximum that an individual can receive during the benefit year is 80 times his daily benefit rate, the range thus being from $140 to $240.

Although the new law is founded on the same general philosophy as the unemployment insurance section of the Social Security Act, it is different in that the moneys collected from the railroads are to be "earmarked" for the Board's account and not placed in the Treasury's general fund as are the Social Security Board's funds. The Secretary of the Treasury may invest them, but he must not use them for paying other government bills.

I. C. C. Continues Express Hearings

(*Continued from page 528*)

lose some business and gain some by the new rates. He went on to say that they expected to derive the greatest gain from the low-rate field. C. A. Lutz, vice-president in charge of accounting of the R. E. A., also testified briefly.

Appearing for the San Juan Fish & Packing Company of Seattle, Wash., was Clarence C. Dill, former U. S. Senator from Washington, who protested the proposed increased rates on fish from north Pacific Coast points to the middle west. He asserted that if the express rates on Pacific Coast fish were increased, the field of competition for his clients would necessarily be decreased due to low truck rates from the Atlantic Coast, or they would have to resort to a cheaper form of transportation if that were available.

J. R. Van Arnum, representing fruit dealers and shippers in Louisiana and Texas, also entered an appearance at the hearing.

Roads Repair Storm Damage

(*Continued from page 527*)

lines still out of service on the evening of October 4 follow:

NEW HAVEN DIVISION
Between Hawleyville and Litchfield
Between South Britain and Towantic

HARTFORD DIVISION
Between New Hartford and Unionville
Between Amston and Colchester

PROVIDENCE DIVISION
Between New London and north of Norwich
Between Southbridge and Webster
Between Mystic and Westerly
Between Riverside and Bristol

BOSTON DIVISION
Between Tiverton and Newport
Between Tremont and Fairhaven
All Cape lines east of Wareham

It was expected that the Connecticut river route between Saybrook and Hartford would be restored to service by October 5. The road opened its second track between New Haven and New London late October 4 and between New London and Mystic early October 5. As soon as one track is opened between Mystic and Stonington all rail-service via the Shore Line will be possible.

To minimize "red-tape" during the period of line rehabilitation and service emergency, operating control was centered in the office of S. F. Mackay, general superintendent of transportation, who together with the superintendents of passengers and freight transportation maintained a 24-hour "trick." Representatives of the freight and passenger traffic departments were also present in the transportation office 24 hours a day.

Successive restorations of service on the Boston & Albany were as follows: Through passenger service was restored between Boston, Springfield and New York on Friday, September 30, by the departure of Train 59 at 4 p. m., from Boston and at 4:10 p. m., from New York. The main line between Boston and Albany was restored for through freight service midnight, October 1. Through passenger service to and from the southwest was restored westbound with the departure of train No. 27 "New England States," leaving Boston 1:50 p. m. on Monday, October 3, and eastbound with the departure of the Albany Night Express from Albany at 1 a. m. October 3.

At present all freight service on the Boston & Albany is in operation with the exception of the following sections:

North Brookfield branch

Ware river branch—between Thorndike and Winchendon

Athol branch—between Three Rivers, Barretts Junction and Bondsville

North Adams branch

All through passenger service to and from the south and southwest is now normal with the exception of trains 13 and 37 westbound and 8 and 22 eastbound.

Direct passenger service between Montreal and Boston via the Canadian National, Central Vermont and Boston & Maine was restored on the evening of October 1. In connection with the resumption of direct service, the Canadian National discontinued its temporary service to Boston via Portland, Me. Emergency freight runs via Portland are being continued, however, until normal conditions are restored. The Central Vermont was opened as far south as Wilimantic, Conn., for freight service on September 30. Through service to New London was expected to be ready by the end of this week.

The New York, New Haven & Hartford successfully utilized highway vehicles to fill the gaps in railroad service during the period of blockade and line restoration and proved the complete practicality of the co-ordination of emergency highway service with existing open railroad lines on temporary schedules and for a substantial period of time. The experience of the New Haven in such emergency service is made especially interesting by the fact that the road has been operating an extensive motor bus system co-ordinated with railroad services through its wholly-owned subsidiary, the New England Transportation Company, since 1925. N. E. T. operates over 2,658 mi. of highway routes, and is adjudged to be New England's largest motor bus system. It also operates a large fleet of over-the-road freight trucks which figured in the emergency service.

Bridging the gaps in the battered Shore Line of the New Haven has probably been the most weighty challenge to emergency bus operation technique in the whole New England situation. This route, which normally carries the burden of New York-Providence-Boston passenger and freight traffic, was rendered totally inoperative at scores of points along the Connecticut and Rhode Island shore by reason of the serious undermining of its foundation and bridges by several powerful tidal waves that swept over the tracks from the Atlantic Ocean. Since the alternative northern New York-Boston route via Springfield, Mass., was put out of service by flood conditions while the so-called "airline" was worked to full capacity in the handling of freight, it was absolutely necessary that some kind of passenger service be arranged via the shore line; the use of motor buses to cover the section of the line hit hardest by the storm, together with temporary co-ordinated bus and train schedules met this need successfully.

The storm hit New England late on September 21; the Shore Line east of New Haven, Conn., was entirely out of service for the next few days. By desperate rehabilitation measures, engineers working east from New Haven finally opened the

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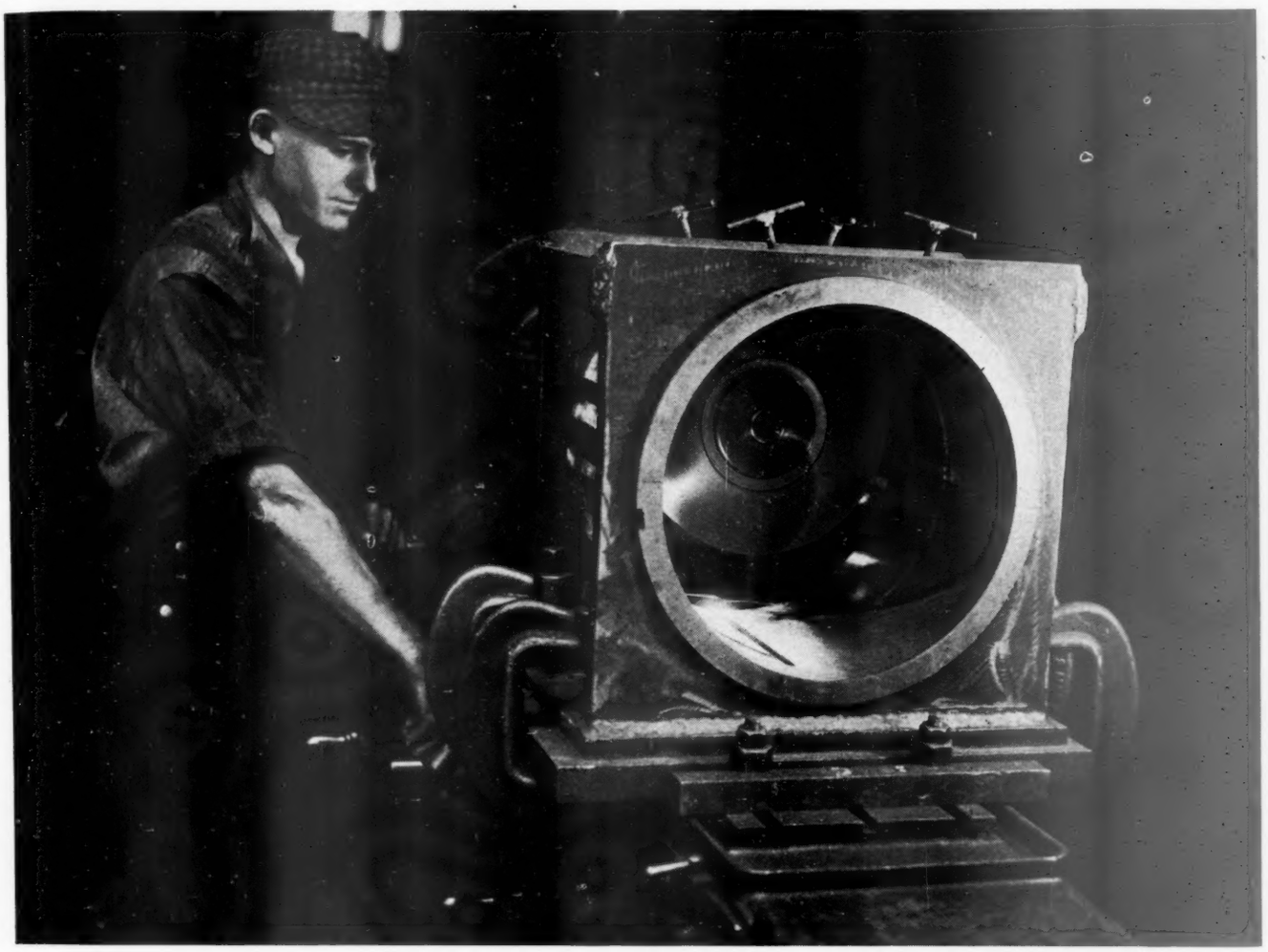
METHODS AND MACHINERY THAT GUARD LIMA QUALITY



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line as far as Saybrook, at the mouth of the Connecticut river, while gangs working west of Providence opened a single-track line as far west as Westerly, R. I. At exactly 9 p. m., September 23, a "carry-all" train of coaches and diners only pulled out of New York for Boston and a similar train left the Hub city for New York. Each covered its respective route to the end of the rails where passengers were transferred to emergency buses and "forded" by road over the gap of 36.2 mi. intervening. For this purpose railroad officers had gathered some 24 buses offering 809 aggregate seats, 18 of which vehicles were of New England Transportation Co. ownership, while 6 were hired locally.

On the following day, September 24, the road inaugurated a scheduled co-ordinated service over the road. Five trains were scheduled each way, leaving New York and Boston simultaneously at eight and ten a. m., and one, three and five p. m., with bus transfer between Saybrook and Westerly. These extra runs supplanted regularly scheduled trains between New Haven and Providence, while near-normal train service was operated between those points and New York and Boston, respectively. Running time of each extra run between Boston and New York was 8 hours, 20 min. eastward and 7 hours, 50 min. westward. The greater time of the eastward run was due to the necessity of running locomotives backward on the single track from Westerly to Providence. By the following Monday, the line had been opened as far east as New London, Conn., leaving an 18.4-mi. gap for the buses to cover and cutting running time by just one hour. Effective the morning of October 4 the over-all running time was cut to 5 hr. 50 min. eastbound and 6 hours westbound. The new arrangement brought the time of the eastbound run into conformity with the westbound as new time factors permitted the road to relay light engines between Westerly and New London and operate them in the forward position on loaded runs in both directions. These five co-ordinated runs in either direction were still being operated daily at time of writing, Wednesday, October 5, and will continue until the rail line is opened throughout. More than 20,000 passengers were carried on the emergency shore line buses between inauguration of the service on a scheduled basis on September 24 and the evening of October 3. The number using the unscheduled connection buses on the evening of September 23 has not been ascertained.

The New Haven also handled mail and newspapers by truck in place of shore line railroad service. Between September 24 and October 2, the road operated under contract 350 truckloads of U. S. mail from Providence to New Haven and 308 truckloads from New Haven to Providence. On Sunday, September 25, the road had 75 individual motor trucks in service between these points, using largely N. E. T. over-the-road freight units. The U. S. Post Office Department, in addition, operated a number of trucks on its own account between these points. As a service to newspaper publishers, the road operated train No. 32, its early Sunday morning mail and paper run, on September 25 out of New York as far as Saybrook, whence sport sections and comic strips for numerous New England families were transferred to trucks and dispatched to Providence and Boston.

Buses and trucks were used extensively during the emergency period on other parts of the system, but inasmuch as many important communication lines were out of service at the time and a great deal of the authority to contract for substitute motor services were delegated to local officers and agents, full statistics are not yet available. Regular bus and truck routes of the N. E. T. were kept in service where highway conditions permitted, and railroad patrons cared for in this manner. Again, in the case of stranded freight cars in many cases agents were instructed to transfer ladings to local trucks for conveyance to destination or warehouses. Railroad passengers stranded in New Haven when rail service eastward ceased were cared for in sleeping cars overnight at near-by Cedar Hill yards and carried, when possible, to their destination on the following day by N. E. T. buses, a movement involving the transfer of from 450 to 500 passengers. 16 35-passenger vehicles were pressed into service for this purpose. On following days, N. E. T. buses customarily ran on the open routes in five or more sections. Since the only road open to the north was the so-called shore road, New Haven became the focal point of the N. E. T. system and passengers to and from such points as Hartford, Springfield, and Waterbury, made connections there. During the emergency period a representative of the New Haven railroad transportation department established temporary headquarters above the operating office of the highway subsidiary in New Haven to effect close control of joint services.

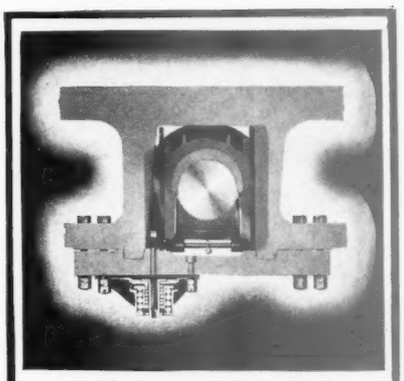
* * *

Cartoon by Webster in the N. Y. Herald-Tribune

"The Thrill That Comes Once in a Life-Time"

Continued on next left-hand page

Differences in driving box temperatures of as much as 250° in short periods of time result in hand-adjusted driving box wedges being either too loose or too tight. » » » The solution is the Franklin Automatic Compensator and Snubber. With this application, accurate adjustment is constantly maintained . . . while the locomotive is running. » » » Any expansion or contraction that occurs in the driving box is automatically taken up. In addition, abnormal shocks are taken care of by a heavy outer spring that acts as a cushion. » » » For constant, accurate adjustment, easier riding, prevention of pounds, and reduced tire wear, incorporate Franklin Automatic Compensators and Snubbers.



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The close tolerances essential for efficient Booster operation call for genuine repair parts made by Franklin.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK CHICAGO MONTREAL

Equipment and Supplies

NEW YORK CENTRAL.—This road has applied to the Interstate Commerce Commission for a modification of the order approving the plan whereby it obtained from banks a $5,000,000 "work loan" guaranteed by the Reconstruction Finance Corporation (see *Railway Age* of September 3, page 361). The petition for modification sets forth that the portion of the loan originally intended for the repair of 1,000 freight cars "can be used to better advantage" in repairing about 50 additional locomotives. Also, it is asked that the statement of the purposes for which the loan was obtained be made approximate in view of the difficulty of making exact estimates. Thus, the revised program, which supercedes that summarized in the "Equipment and Supplies" columns of the *Railway Age* of August 13, contemplates that the money will provide 2,555,000 man-hours of employment in the work of laying approximately 28,600 tons of rail and fastenings, and repairing about 235 locomotives and about 300 passenger cars.

September Equipment Orders

American equipment manufacturers received orders during the month of September for a total of 5 locomotives, 1,079 freight cars and 11 passenger-train cars, bringing the total orders received thus far this year to 101 locomotives, 9,406 freight cars, 118 passenger-train cars. Orders were also placed during the month for a total of seven rail motor cars for passenger service. No rail was ordered during the month and the total for the year thus far remains 196,615 tons.

The export market yielded orders for 68 freight cars.

Domestic Equipment Orders Reported in Issues of The Railway Age in September, 1938

(Including October 1)

LOCOMOTIVES

Date	Name of Company	No.	Type	Builder
Sept. 24	Wheeling & Lake Erie	5	2-8-4	American Locomotive Co.

FREIGHT CARS

Sept. 3	J. M. Huber Corp.	4	Hopper	American Car & Foundry
Sept. 10	Union Pacific (leased)	50	Box	Pullman-Standard
Sept. 10	U. S. Army	25	Tank	American Car & Foundry
Sept. 24	Illinois Central	1,000	Box	American Car & Foundry

PASSENGER-TRAIN CARS

Sept. 24	Southern	4	Coaches	St. Louis Car Co.
Sept. 24	Alabama Great Southern	2	Coaches	St. Louis Car Co.
Oct. 1	Chicago, Burlington & Quincy..	3		Edward G. Budd Mfg. Co.
Oct. 1	Chicago, Burlington & Quincy..	2	Sleeping	Edward G. Budd Mfg. Co.

IRON AND STEEL

New York Central System $2,000,000 Rail and Accessories Orders

The New York Central System has placed contracts for 30,500 tons of new rail and contracts for track accessories, for use during the balance of this year, aggregating approximately $2,000,000. The rail order was divided among the Bethlehem Steel Company, Carnegie-Illinois Steel Corporation, Inland Steel Company and Algoma Steel Corporation. The contracts for track accessories were divided among the following companies: American Fork & Hoe Co., Bethlehem Steel Company, Carnegie-Illinois Steel Corporation, Cleveland Frog & Crossing Co., Creepcheck Company, Inc., Illinois Malleable Iron Company, Inland Steel Company, Jones & Laughlin Steel Corp., Morden Frog & Crossing Works, The P. & M. Co., Ramapo Ajax Division of American Brake Shoe & Foundry Co., Republic Steel Corporation, Taylor-Wharton Iron & Steel Co., Weir Kilby Corporation, Weirton Steel Company, Wheeling Steel Company, Woodings Forge & Tool Co., Youngstown Sheet & Tube Co.

LOCOMOTIVES

THE NEW YORK CENTRAL is inquiring for 15 Diesel-Electric switching locomotives.

SIGNALING

THE ST. LOUIS-SAN FRANCISCO has placed an order with the Union Switch & Signal Company for automatic block signaling materials to be installed on 31 miles of single-track line between Bay, Ark., and Turrell, involving 51 one-arm, three-position semaphore ground signals, with necessary relays, switch circuit controllers and other attendant apparatus. These materials will be installed by the railway company's signal construction forces.

WISCONSIN CENTRAL.—Sealed proposals will be received at the offices of this road, 1520 First National-Soo Line building, Minneapolis, Minn., until 10:00 a. m., October 17, for furnishing the materials required for the installation of two sets of flashing light signals in the State of Illinois. Information may be obtained from T. Z. Krumm, chief engineer, at the above address.

Supply Trade

Stanley H. Smith has been appointed railroad representative of the **Gould Storage Battery Corporation** in the Cleveland (Ohio) district, with headquarters at Cleveland.

The Silent Hoist Winch & Crane Co., has moved its works and general offices from 762 Henry street to improved facilities at 841 to 865 63rd street, Brooklyn, N. Y.

W. G. Dixon, formerly connected with C. D. Hicks & Co., St. Louis, Mo., has organized **W. G. Dixon & Associates,** 1218 Olive St., St. Louis, for the sale of machinery, equipment, tools and supplies, lumber and piling.

William Sellers & Co., Inc., Philadelphia, Pa., manufacturers, since 1848, of machine tools, has engaged **Clarke-Harrison, Inc.,** management engineers, to take charge of all the company's operations, including research, design, engineering, manufacturing and sales.

Facilities of the **USL Battery Corporation** in Niagara Falls, N. Y., formerly devoted to the manufacture of batteries for railroad, industrial and utility service are now being utilized for automobile battery manufacture, and the company's industrial battery division is being discontinued. Arrangements have been made with the **Gould Storage Battery Corporation,** Depew, N. Y., to acquire the USL power battery department and to continue for USL customers complete inspection and replacement service covering USL industrial batteries now in the field.

W. F. Munnikhuysen, first vice-president of the **Wood Preserving Corporation,** Pittsburgh, Pa., has been elected president to succeed **A. W. Armstrong,** deceased. **J. P. Williams, Jr.,** president of the Koppers Coal Company, has been elected a director of the Wood Preserving Corporation. Directors on September 28 also gave final approval to the dissolution of the Carolina Wood Preserving Corporation and the National Lumber and Creosoting Company, both Wood Preserving subsidiaries. All assets and operations of both companies will be transferred to the Wood Preserving Corporation, a Koppers Company subsidiary.

Mr. Munnikhuysen was born in Bel Air, Maryland, and was graduated from Cornell University in 1915 with a degree in civil engineering. He joined the construction department of the Koppers Company in 1916 and was later transferred to plant operations. For several years he had charge of the Chicago sales office for the Koppers Construction Company until 1930, at which time he became vice-president in charge of the Connecticut Coke Company at New Haven, Conn. In May, 1935, he was elected vice-president of the Wood Preserving Corporation, with headquarters at Pittsburgh, Pa., which position he held until his recent election.

A. C. Seyfarth, assistant advertising

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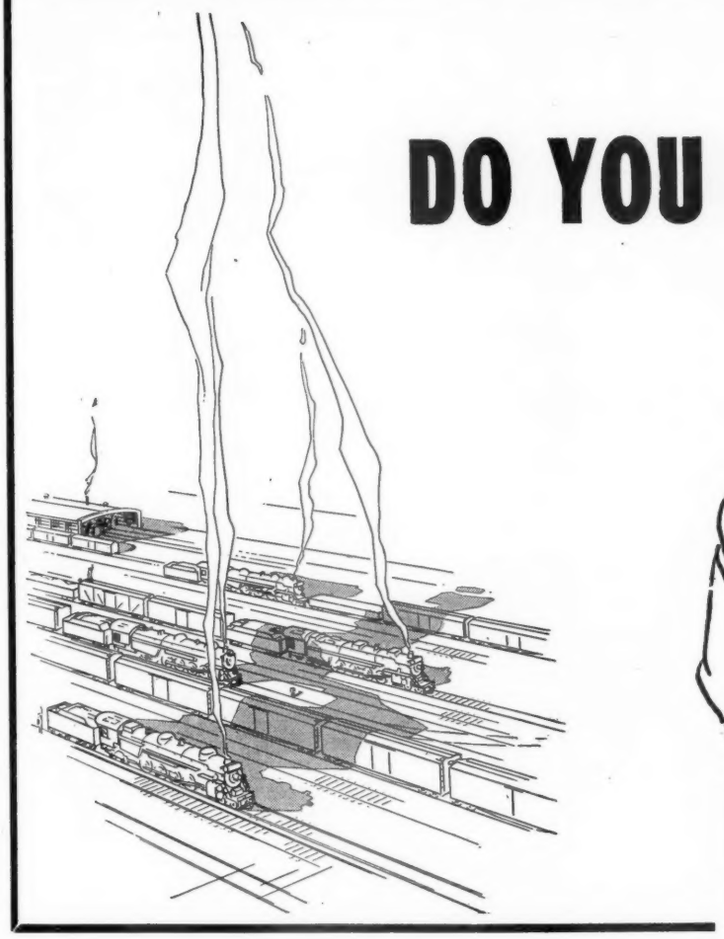
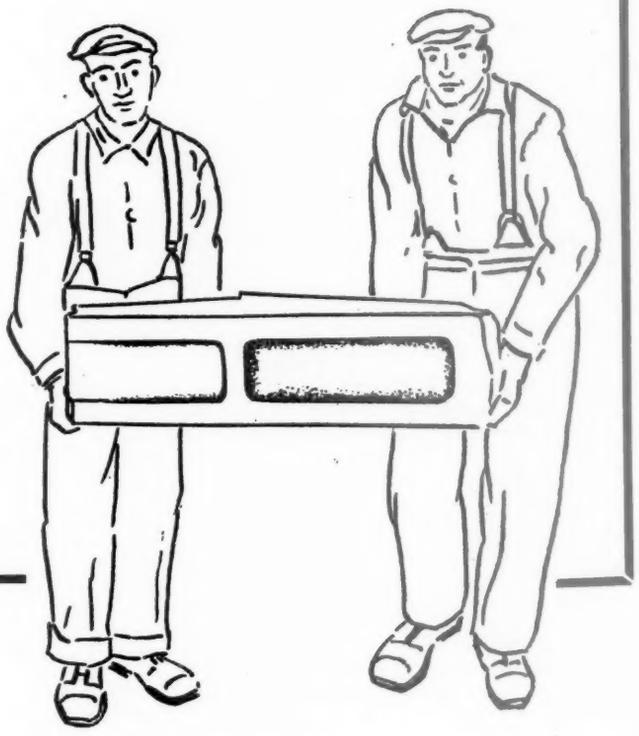
DO YOU REMEMBER?

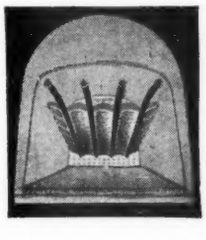




Remember years ago when Arch Brick came in slabs that took two men to carry? American Arch Company developed the sectional brick that replaced the old form. » » » Remember years ago when Arch Brick was an uncertain gamble, some was good and a lot was not? American Arch Company made an intensive study of combustion conditions and their relation to Arch Brick composition and took the guess out of Arch Brick. » » » Remember years ago when you ran out of needed shapes and sizes and yet found the storeroom full of Arch Brick? American Arch Company organized a service of supply that corrected such conditions and assured you plenty of Arch Brick when and where needed, without permitting the accumulation of obsolete stock. » » » In the 28 years American Arch Co. has been serving the railroads, it has removed Arch Brick from the list of things to worry about.

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists



AMERICAN ARCH CO.
INCORPORATED
60 EAST 42nd STREET, NEW YORK, N. Y.
Locomotive Combustion Specialists

manager of the **International Harvester Company,** Chicago, has been promoted to advertising manager, to succeed **Frank W. Heiskell,** who retires after 25 years of service. Mr. Seyfarth entered the employ of the Harvester Company in 1904 after attending the University of Michigan and the University of Chicago, and after working for a short time as an advertising solicitor. He started as a catalog writer, and after successive promotions he was made chief catalog writer and copy chief, in charge of all advertising copy production. He became assistant advertising manager in 1913, which position he held until his recent promotion.

OBITUARY

Harry W. Finnell, manager of the Chicago branch of Fairbanks, Morse & Company, from 1923 to 1927, and since that time vice-president of the Phelps Dodge Copper Products Corp., died in New York on October 1 after a short illness.

Construction

ATCHISON, TOPEKA & SANTA FE.—This company has awarded several additional contracts in connection with its yard improvements at Eighteenth street and Wentworth avenue, Chicago. A contract for the construction of a new one-story brick building 25 ft. by 461 ft., on a concrete and pile foundation, to be known as service building No. 2, has been awarded the Austin Company, Cleveland, Ohio. This building will be used to consolidate the various small shops that were previously housed in separate buildings. Other contracts let in connection with the construction of this building were: to E. T. Kaiser, Chicago, for heating, and to O'Callaghan Brothers, Chicago, for the plumbing work. In addition, a contract for all the electrical work in connection with the changes at this yard has been let to the Super Electric Construction Company, Chicago.

CHICAGO & EASTERN ILLINOIS.—A contract has been awarded The Austin Company, Cleveland, Ohio, for the construction at the Oaklawn shops of this company at Danville, Ill., of a new coach shop 110 ft. by 417 ft. of brick construction with steel framework on a concrete foundation which will cost approximately $200,000.

CHICAGO GREAT WESTERN.—Bids will be received at the office of the purchasing agent of this road, Room 1200, 309 Jackson Blvd., Chicago, until 10:00 a.m., October 17, for the furnishing of signal materials to be used for the installation of highway grade crossing protection at one crossing at Pearl City, State of Illinois.

GULF, MOBILE & NORTHERN.—Bids will be received, by this road, at 12:00 noon, on October 28, for all materials necessary for installation of electric flashing highway crossing signals to be installed at Richton, Miss., under federal grade crossing project WPGS 322-1, and at Beaumont, Miss., under federal grade crossing project WPGS 322-A of the State of Mississippi. Particulars may be obtained from H. E. Warren, manager purchases and stores of this road at 71 Conti street, Mobile, Ala.

NORTHERN PACIFIC.—The Starbuck Construction Company, Starbuck, Minn., was the low bidder on the proposed underpass for State Highway No. 32 at Fertile, Minn., with a bid of $54,420.

READING.—The Pennsylvania Public Utility Commission has ordered the elimination of the grade crossing of Mt. Airy avenue on State Highway Route No. 67015, over the tracks of the Chestnut Hill branch of the Reading in the City of Philadelphia. This is to be accomplished by the construction of two bridges and approaches thereto having a total length of 1,042 ft. to carry the highway over the tracks of the Reading and over the grade of Sprague street.

SOUTHERN PACIFIC.—Bids were opened September 26, by the Bureau of Reclamation of the United States Department of the Interior for the construction of the first 14 miles of the Southern Pacific relocation around the Shasta Reservoir site north of Redding, Cal. The bids include excavation and grading of the roadbed as far as the Pit river, including bridges, except the Sacramento River bridge, for which, contracts totaling $742,420 have already been awarded as announced in the *Railway Age* of September 17. Granfield, Farrar & Carlin Co., San Francisco, Cal., was the low bidder on schedules 1, 2, 3 and 4 with a combination bid of $812,380.90 for this work, which covers the first 12½ miles of railroad construction, including the erection of two overhead crossings and one underpass at highway intersections. The West Construction Co., Monrovia, Cal., was the low bidder on schedule 5, with a bid of $904,981 for the construction of 1½ miles of railroad, including two half-mile tunnels at Bass Hill summit. Laying of the track and installation of block signals will be done by the Southern Pacific with its own forces. The relocated railroad line eventually will extend a total distance of 30 miles from Redding to Delta, Cal., in the Siskiyou mountains, replacing 37 miles of existing main line up the Sacramento river canyon through the reservoir area of the Shasta dam project.

WAR DEPARTMENT.—The Savanna Ordnance Depot of the War Department, Savanna, Ill., has awarded a contract amounting to approximately $122,700 to the Acme Railroad Construction Co., Cleveland, Ohio, for the construction of 29,140 ft. of standard gage railroad track, including 33 turnouts.

WINSTON-SALEM SOUTHBOUND.—Sealed proposals will be received by this road, Winston-Salem, N. C., until 12:00 noon, October 20, for furnishing the necessary materials for the installation of a flashing light highway crossing signal at Southmont, N. C. G. F. Turley, general superintendent, Winston-Salem.

Financial

CENTRAL OF NEW JERSEY.—*Sales of Lands.*—A group of holders of mortgage bonds have been meeting with the management of this road to discuss the possibility of disposing of certain marginal lands in Jersey City, N. J., and Bayonne, which sale would reduce annual tax charges by about $400,000 annually. Assent of bond holders is necessary to modify the mortgage indenture to allow for the sale.

CHICAGO, GREAT WESTERN.—*Reopening and Modification of Reorganization Plan.*—The common stockholders of this company have asked the Interstate Commerce Commission for a rehearing and modification of this company's reorganization plan as promulgated by the commission. In their petition to the commission, the common stockholders assert that "If the commission should adhere to its view that the common stockholders are not entitled to receive securities of the reorganized company outright, at least some provision should be made for them to receive such securities, either without the payment of money, or the happening of certain specified contingencies, or upon some fair subscription terms."

At the same time, a protective committee representing the holders of the company's preferred stock asked for a rehearing. They desire the commission to make the following modifications in its final plan:

1. Interest on the claim of the Reconstruction Finance Corporation should be accrued at a rate of four per cent instead of six per cent.

2. Accrued and unpaid interest on the present first mortgage bonds should not be recognized in full, and to the extent recognized should not be satisfied through the issuance of income or dividend-bearing securities.

3. Interest on the income bonds should be fixed at four per cent instead of at 4½ per cent, and the dividend rate on the new preferred stock at four per cent instead of five per cent.

4. Interest on the income bonds and dividends on the preferred stock should be entirely non-cumulative.

5. The total capitalization of the reorganized company should be increased to an amount in excess of $62,291,827, and the equity of the present preferred stockholders valued at more than $11,518,375; or in the alternative the present preferred stockholders should receive a larger proportion of the new common stock than has been allocated to them in the plan.

6. The par value of the new common stock should be reduced from $50 a share to a par value of $25 a share or less.

MISSOURI PACIFIC.—*Reorganization.*—The Interstate Commerce Commission, Division 4, has authorized G. H. Walker, Alexander Berger, Willard V. King, B. A. Tompkins, and George E. Warren, as a protective committee for holders of first mortgage bonds and income mortage bonds of the New Orleans, Texas & Mexico, to solicit authorizations and deposits and to

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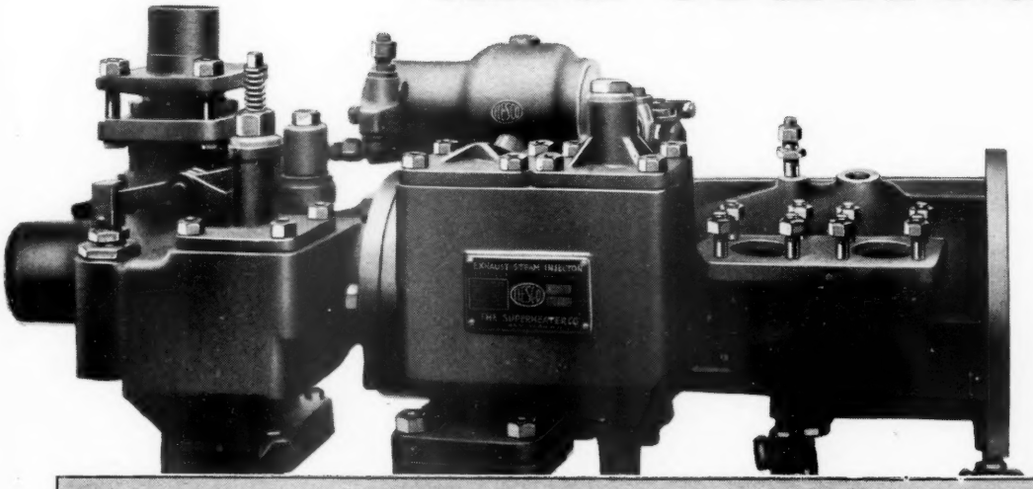
They tried 1 and ordered 9 more



A WELL known American railroad ordered an Elesco exhaust steam injector for test.

After an exhaustive test the railroad purchased nine more.

Elesco exhaust steam injectors will DEPENDABLY feed the locomotive boiler and, at the same time, REDUCE fuel and water consumption. Maintenance is negligible as there are no continuously moving parts.

More than 20,000 of this type of injector are in service on railroads throughout the world.

Try one and you will order more. The TREND is toward the Elesco exhaust steam injector.

ELESCO A-1259

THE SUPERHEATER COMPANY

Representative of AMERICAN THROTTLE COMPANY, INC.
60 East 42nd Street, NEW YORK 122 S. Michigan Ave., CHICAGO
Canada: THE SUPERHEATER COMPANY, LTD., MONTREAL

Superheaters « Exhaust Steam Injectors « Feed Water Heaters « American Throttles « Pyrometers « Steam Dryers

use, employ, and act under and pursuant to such authorizations and a suitable deposit agreement, in this company's reorganization case.

NEW YORK, CHICAGO & ST. LOUIS.—*Note Extension Plan.*—This road has declared operative its plan for extension of its six per cent unsecured notes due October 1, 1938, to October 1, 1941, this week after 83.5 per cent of the notes had been deposited. Following announcement of his decision to make the plan operative, President G. D. Brooke issued a statement to the effect that substantially all of the notes must be deposited if the Nickel Plate is to avoid reorganization under Section 77; that nearly $2,500,000 face value of the notes remain undeposited; and that a current forecast of the road's cash balance indicates that this amount cannot be provided from present cash reserves and operating requirements be met at the same time. At the same time the road has announced that it would defer interest payments due October 1 on its refunding mortgage 5½ per cent series A bonds and principal interest payments due on its three year 6 per cent notes.

NEW YORK, NEW HAVEN & HARTFORD.—*Reorganization.*—The Housatonic Bondholders' Protective Committee has asked the Interstate Commerce Commission to postpone oral argument on exceptions and to reopen the proceeding to take further evidence in this company's reorganization case.

PENNSYLVANIA.—*Abandonment by the Philadelphia, Baltimore & Washington.*—The Interstate Commerce Commission, Division 4, has authorized the Pennsylvania to abandon the operation and the Philadelphia, Baltimore & Washington to abandon that part of its Pomeroy branch extending from Newark Centre, Del., to Thompson, 3.1 miles.

RICHMOND, FREDERICKSBURG & POTOMAC.—*Equipment Trust Certificates.*—The Interstate Commerce Commission, Division 4, has authorized this company to assume liability for $740,000 of 2½ per cent serial equipment trust certificates, maturing in 10 equal annual installments of $74,000 on October 15 in each of the years from 1939 to 1948 inclusive. The issue has been sold to the First Boston Corporation at 103.3887, making the average annual cost of the proceeds to the company approximately 1.82 per cent.

SPOKANE INTERNATIONAL.—*Date Set for Oral Argument.*—The Interstate Commerce Commission, Division 4, has set November 1, as the date for oral argument on the commission's reconsideration of this company's reorganization case.

Average Prices of Stocks and Bonds

	Oct. 4	Last week	Last year
Average price of 20 representative railway stocks..	28.03	23.68	37.90
Average price of 20 representative railway bonds..	59.73	55.99	73.61

Dividends Declared

Norfolk & Western.—Preferred, $1.00, quarterly, payable November 19 to holders of record November 1.

Reading.—25¢, quarterly, payable November 10 to holders of record October 14.

Railway Officers

FINANCIAL, LEGAL AND ACCOUNTING

G. A. K. Richard, chief clerk in the accounting department of the Chicago, Burlington & Quincy at Chicago, has been promoted to auditor of ticket accounts, replacing **G. S. Cooper,** who retired on October 1.

Otto F. Nau, local treasurer of the Illinois Central, with headquarters at Chicago, retired September 30. The duties of his position will be assumed by **Robert E. Connolly,** secretary and treasurer, whose office was recently transferred to Chicago from New York. **A. B. Huttig,** assistant secretary, has been promoted to assistant secretary and treasurer.

Fred T. Dickerson, secretary and treasurer of the Central of New Jersey, has retired at his own request after more

Fred T. Dickerson

than 54 years of continuous service with that road. **William Kohler,** assistant secretary and assistant treasurer at New York, has been elected secretary and treasurer, to succeed Mr. Dickerson. **Harry M. Sanderson,** has been appointed assistant secretary and assistant treasurer to succeed Mr. Kohler. Mr. Dickerson was born at Ramapo, N. Y., on January 28, 1867, and was educated in the public schools and Coleman's Business College, Newark, N. J. He entered railroad service in 1884 as assistant agent and telegraph operator with the Central of New Jersey, which road he served continuously until his retirement. In 1888 Mr. Dickerson was appointed assistant train dispatcher, becoming station agent and telegraph operator the following year. From 1891 to 1902 he served as clerk in the accounting department and chief clerk to the vice-president and comptroller. From 1902 to 1914, he was chief clerk to the vice-president and general manager and had the duties of assistant secretary of the company. In the latter year Mr. Dickerson was appointed assistant to president and assistant secretary, the position he held until 1920, when he was appointed secretary and treasurer of the Central of New Jersey and subsidiary companies. Mr. Dickerson is a past president of the New York Railroad Club.

Mr. Kohler was born in Austria on

William Kohler

February 27, 1886, and entered railroad service on June 6, 1902, with the Central of New Jersey, serving until April 1, 1905, as junior clerk and clerk in the office of the auditor of passenger traffic at Philadelphia. He then served as clerk, traveling clerk and traveling auditor in the office of the general auditor and comptroller. On July 1, 1918, Mr. Kohler was appointed bookkeeper, later becoming general bookkeeper in the office of the comptroller at New York. On March 1, 1920, he was appointed accountant in the office of the secretary and treasurer, at New York, and on July 24, 1924, he became assistant treasurer at New York. Mr. Kohler was appointed assistant secretary and assistant treasurer at New York on October 29, 1931, the position he held until his recent appointment as secretary and treasurer.

Mr. Sanderson was born at Reading, Pa., on September 8, 1887, and entered the service of the Central of New Jersey at

H. M. Sanderson

Jersey City on September 27, 1902, as messenger in the telegraph department. He served as clerk in the general superintendent's office and the office of the superintendent of telegraph until December 19,

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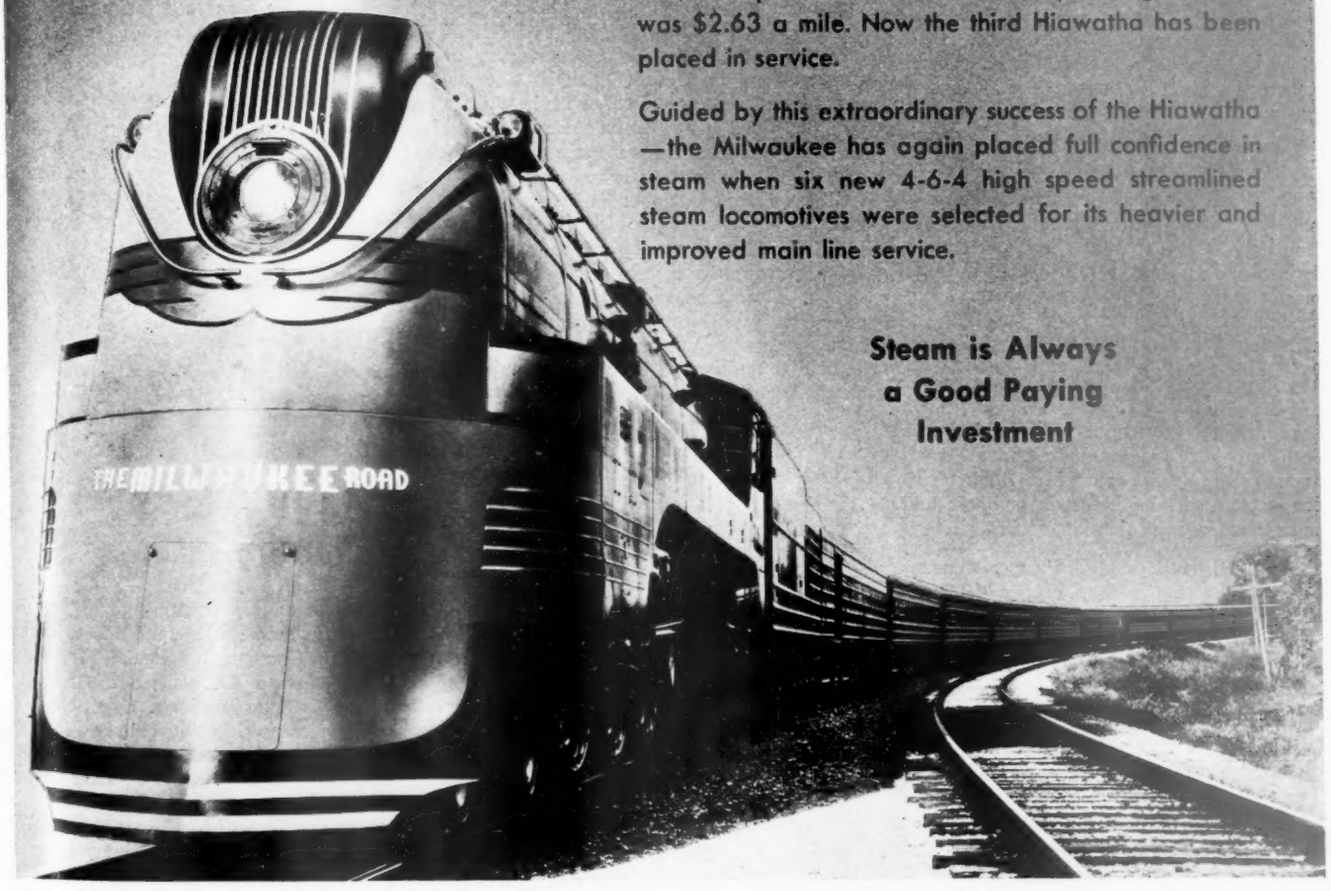
Steam Again

For The Six New High Speed MILWAUKEE Streamlined Locomotives

"NOTHING SUCCEEDS LIKE SUCCESS." Three years ago the original Hiawatha, hauled by the first newly built streamlined steam locomotive, was acclaimed a marvel in transportation. Its instant success both as a traffic builder and a money maker soon necessitated the second Hiawatha. Nearly a million paying passengers averaging more than 800 daily have traveled on this famous flyer. Gross earning in 1937 amounted to $3.90 per train mile and net operating revenue was $2.63 a mile. Now the third Hiawatha has been placed in service.

Guided by this extraordinary success of the Hiawatha —the Milwaukee has again placed full confidence in steam when six new 4-6-4 high speed streamlined steam locomotives were selected for its heavier and improved main line service.

Steam is Always a Good Paying Investment



AMERICAN LOCOMOTIVE COMPANY

30 CHURCH STREET NEW YORK N.Y.

1906. Mr. Sanderson was transferred as clerk to the office of the vice-president and general manager at New York, and has served continuously in that office and the office of the president, as clerk, assistant chief clerk, chief clerk and secretary to the president and secretary to the chairman of the board.

J. H. Reddy, auditor of capital accounts of the Delaware & Hudson, has been appointed auditor of miscellaneous accounts, with headquarters as before at Albany, N. Y., having jurisdiction over all matters heretofore assigned to the freight claim agent and the auditor of capital accounts. The position of freight claim agent, formerly held by **R. B. Sims,** deceased, and the position of auditor of capital accounts, formerly held by Mr. Reddy, have been abolished.

OPERATING

G. O. Baker, freight agent on the Canadian National at Halifax, N. S., has been promoted to trainmaster of the Halifax division, with headquarters at Bridgewater, N. S.

J. R. Altizer, supervisor of bridges and buildings on the Radford division of the Norfolk & Western, at Roanoke, Va., has been appointed assistant superintendent of the Radford division, at Roanoke, succeeding the late **F. L. Burton.**

R. E. Beach, supervisor of wage schedules of the Southern Pacific, with headquarters at San Francisco, Cal., has been promoted to assistant to the general manager, in charge of labor matters, a newly created position.

G. W. Kelley, assistant terminal trainmaster on the Southern Pacific, Texas and Louisiana lines, with headquarters at Houston, Tex., has been promoted to trainmaster, with the same headquarters, succeeding **L. B. Church,** who has been assigned to other duties.

John J. Boylan, district sales manager of the Railway Express Agency, with headquarters at Kansas City, Mo., has been appointed assistant to general sales manager at New York. Mr. Boylan will conduct a series of industrial surveys and engage in sales promotion generally.

R. L. Sproul, assistant superintendent car records of the Southern, with headquarters at Atlanta, Ga., has been appointed superintendent car service, with the same headquarters, succeeding **J. A. Rathburn,** superintendent car records, who has retired after 37 years of service. The position of assistant superintendent car records has been abolished.

H. R. McKee, superintendent of the New Mexico division on the Northern district, Western Lines, of the Atchison, Topeka & Santa Fe, with headquarters at Las Vegas, N. M., has been transferred to the Slaton division of the Panhandle & Santa Fe, with headquarters at Slaton, Tex., succeeding **J. R. Skillen,** who in turn has been transferred to Las Vegas, replacing Mr. McKee.

H. C. Munson, whose promotion to superintendent of the Iowa and Southern Minnesota division of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Austin, Minn., was announced in the *Railway Age* of September 17, was

H. C. Munson

born at Oslo, Norway, on June 25, 1901, and graduated in civil engineering from the State University of Iowa in June, 1923. He entered railway service on June 6, 1923, as a rodman, on construction work on the Milwaukee at Momence, Ill., and in October, 1923, he was advanced to instrumentman at Marion, Iowa, later being transferred to Chicago. In April, 1928, he was promoted to assistant engineer at Chicago, and in March, 1929, he was advanced to division engineer, with headquarters at Sioux City, Iowa. Mr. Munson was promoted to trainmaster, with headquarters at Ottumwa, Iowa, on April 1, 1931, and on September 1, 1934, he was transferred to Savanna, Ill. On January 15, 1936, he was transferred to LaCrosse, Wis., as trainmaster of the First division, and on December 16, 1937, he was promoted to assistant superintendent, with headquarters at Wausau, Wis., the position he held at the time of his recent promotion.

TRAFFIC

Thomas V. Bush has been appointed New England coal traffic agent of the Chesapeake & Ohio, with headquarters at Boston, Mass.

H. J. Hart has been appointed industrial agent of the Erie, with headquarters at New York, succeeding **V. M. Wellman,** deceased.

A. J. Hellstrom, commercial agent on the New York, Chicago & St. Louis, with headquarters at Minneapolis, Minn., has been promoted to general agent at that point, succeeding **W. B. Robbins,** who retired October 1.

George O. Thoresen, general agent for the Grand Trunk and the Canadian National at Detroit, Michigan, has been transferred to St. Louis, Mo., relieving **William H. Burke,** who retired on October 3.

G. R. Webster, division freight and passenger agent on the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Spokane, Wash., has been promoted to general agent at Seattle, Wash., succeeding **A. J. Hillman,** who retired on October 1.

Frank M. Schnell, district passenger agent on the Great Northern, with headquarters at New York, has been promoted to general agent, passenger division, with the same headquarters, succeeding **Michael M. Hubbert,** whose death on September 9 was announced in the *Railway Age* of September 17.

R. T. Etheridge, assistant freight traffic manager of the Seaboard Air Line, with headquarters at Norfolk, Va., has been appointed freight traffic manager, with the same headquarters, succeeding **R. H. Eberly,** who has retired on account of ill health. **L. P. King,** assistant freight traffic manager in charge of commission cases, has been placed in charge of rates and divisions. **W. W. Wolford** has been appointed assistant freight traffic manager in charge of commission cases. **T. F. Sharpless,** commercial agent at Lake Wales, Fla., has been appointed division freight and passenger agent at Columbus, Ga., to succeed **M. A. Calhoun.**

Mr. Etheridge was born at Portsmouth, Va., and entered the service of the Seaboard Air Line in 1910 in the traffic department, resigning in 1917 to join the U. S. Navy. He was later engaged by the Columbian Peanut Company in Norfolk

R. T. Etheridge

as traffic manager, accepting a similar position with the Philadelphia & Norfolk Steamship Company in 1923. Mr. Etheridge re-entered the service of the Seaboard in 1924 as assistant chief clerk to the first vice-president in charge of traffic and five years later was appointed assistant general freight agent. In 1934 he was promoted to assistant freight traffic manager, having jurisdiction over commission cases. His duties were extended to rates and divisions on August 1, 1936.

Mr. Eberly has had 40 years of service with the Seaboard Air Line. After two years with the New York, Philadelphia & Norfolk (Pennsylvania) at Norfolk, he entered the service of the Seaboard in 1899 as a stenographer. With the exception of

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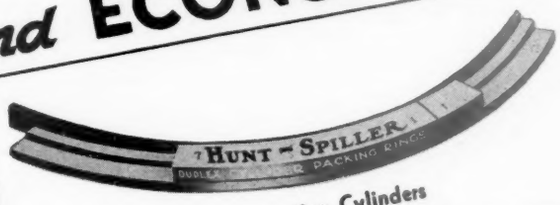
STEAM TIGHT

and ECONOMICAL



For Locomotive Cylinders

When You Seal 'em With Duplex *Sectional* Packing

LEAKS and blows which waste power and fuel cease to be a problem after the application of HUNT-SPILLER Duplex *Sectional* Packing. The well balanced design of this Packing plus the excellent qualities of HUNT-SPILLER *Air Furnace* GUN IRON make up a ring which resists internal stresses and high temperature.

The sections are held against the walls of the valves and cylinders by a scientifically heat treated spring which insures pressure tight performance. The design also provides for maximum service life. Increased mileage between renewals has been affected on many roads.

HSGI
Reg. U. S. Trade Mark
Cylinder Bushings
Cylinder Packing Rings
Pistons or Piston Bull Rings
Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings
Parts Finished For Application
Dunbar Sectional Type Packing
Duplex Sectional Type Packing
for Cylinders and Valves
(Duplex Springs for Above
Sectional Packing)
Cylinder Snap Rings
Valve Rings All Shapes

HUNT-SPILLER MFG. CORPORATION
V. W. Ellet Pres. & Gen. Mgr. / \ E. J. Fuller Vice-President

Office & Works
383 Dorchester Ave. South Boston, Mass.
Canadian Representative: Joseph Robb & Co., Ltd., 5575 Cote St. Paul Rd., Montreal, P. Q.
Export Agent for Latin America:
International Rwy. Supply Co., 30 Church Street, New York, N. Y.

HUNT-SPILLER *Air Furnace* GUN IRON

a three year period from 1904 to 1907, during which time he acted as chief clerk in the freight traffic office at Birmingham,

R. H. Eberly

Ala., Mr. Eberly has been continuously connected with the rate department at Norfolk. He was promoted from stenographer to chief clerk in 1916 and in 1919 he became assistant general freight agent. In 1928 Mr. Eberly was appointed senior assistant general freight agent and the next year became general freight agent. In 1934 he became assistant freight traffic manager and in 1936 he was appointed freight traffic manager, the position he held until his retirement.

Mr. Wolford was born in Birmingham and began his railroad career in 1914 with the Louisville & Nashville at Knoxville, Tenn. After service in the U. S. Army as a lieutenant in the infantry, he resumed service with the L. & N. as rate clerk. In February, 1920, Mr. Wolford went with the Southern as traffic agent at Knoxville and the next year was transferred to the

W. W. Wolford

commerce department as rate clerk at Washington, D. C., later becoming chief clerk. He entered the law school night classes of the National University at Washington in 1924 and was graduated in 1927. During those three years Mr. Wolford continued his duties with the Southern. In 1929 he became executive assistant to the general freight agent of the Southern and was promoted to commerce agent in 1932. Resigning in 1937, he was appointed executive assistant general manager of the New Orleans Joint Traffic Bureau in New Orleans, La., from which position he has resigned to accept his new position with the Seaboard Air Line as assistant freight traffic manager.

ENGINEERING AND SIGNALING

Julian Montanez Covarrubias, has been appointed engineer in charge of buildings of the National Railways of Mexico, with headquarters at Colonia station, Mexico, D. F.

T. B. Ballantyne, assistant district engineer, Canadian Pacific, at Toronto, Ont., has been appointed district engineer, Toronto, succeeding **B. Ripley,** whose promotion to engineer maintenance of way, eastern lines, at Toronto, was reported in the *Railway Age* of October 1. **A. O. Wolff,** division engineer, London, Ont., has been appointed assistant district engineer at Toronto. **W. C. E. Robinson,** division engineer of the Laurentian division, at Montreal, has been transferred in the same capacity to London. **W. F. Koehn,** bridge and building master of the Laurentian division at Montreal, succeeds Mr. Robinson as division engineer of the Laurentian division at Montreal. **J. A. Irvine,** division engineer at Sudbury, Ont., has been appointed assistant district engineer at Montreal, to succeed **J. H. Forbes,** who has been appointed assistant right-of-way agent at Montreal. **L. M. Duclos,** assistant engineer at North Bay, Ont., has been appointed division engineer at Sudbury, to succeed Mr. Irvine.

MECHANICAL

C. T. Bryant, general foreman on the Chesapeake & Ohio, at Peru, Ind., has been appointed master mechanic at Clifton Forge, Va., succeeding **J. D. Davenport,** deceased.

S. M. Houston, assistant master mechanic on the Southern Pacific at West Oakland, Cal., has been promoted to master mechanic at that point, succeeding **J. Shelaberger,** who retired October 1.

John J. Hennessey, retired former master car builder of the Chicago, Milwaukee & St. Paul, and a past president of the Master Car Builders Association, died at his home in Milwaukee, Wis., September 27. Mr. Hennessey served as master car builder of the Milwaukee from 1888 until 1918. He retired in 1919.

J. S. Major has been appointed master mechanic of the Staten Island Rapid Transit (Baltimore & Ohio subsidiary), to succeed **J. F. Bowden,** retired. **E. L. Brown** has been appointed assistant master mechanic, succeeding **H. E. Childs,** resigned. Both of these officers will have their headquarters at Clifton, Staten Island, N. Y. The positions of chief sub-station maintainer and general car foreman have been abolished.

E. D. Hall, chief chemist of the Erie, with headquarters at Meadville, Pa., has been appointed engineer of tests and chief chemist. **R. W. Horton** has been appointed assistant chief chemist and **C. P. Brooks** has been appointed assistant engineer of tests. **K. T. Miller,** engineer of tests at Meadville, has been assigned to other duties.

F. A. Butler, superintendent motive power and rolling stock of the Boston & Albany, retired on September 30, as announced in the *Railway Age* of September 24. Mr. Butler was born on September 21, 1868, at Shrewsbury, Mass., and entered railway service on June 20, 1892, with the Boston & Albany as a locomotive fireman. He then became engineman and later worked in the enginehouse at Beacon Park, Allston, Mass. In May, 1908, he was appointed road foreman of engines and in July, 1910, became master mechanic

F. A. Butler

of the Boston division. Mr. Butler was transferred in the latter capacity to the Albany division in November, 1916, and in January, 1924, he was appointed superintendent motive power and rolling stock at Boston, the position he held until his retirement. The position of superintendent of motive power and rolling stock has been abolished.

SPECIAL

F. M. Perrine, district special agent on the Union Pacific, with headquarters at Omaha, has been promoted to chief special agent, with the same headquarters. The position of chief special agent has been unoccupied since the promotion of **John C. Gale** to assistant to the president, as announced in the *Railway Age* of July 30.

OBITUARY

Oscar G. McPhail, fuel supervisor on the Louisville & Nashville, with headquarters at Louisville, Ky., died at that point on September 25.

Leonard J. Hackney, who retired in April, 1925, as general counsel of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at Cincinnati, Ohio, died at Winter Park, Fla., on October 2, at the age of 83.

Table of Freight Operating Statistics Appears on next left-hand page

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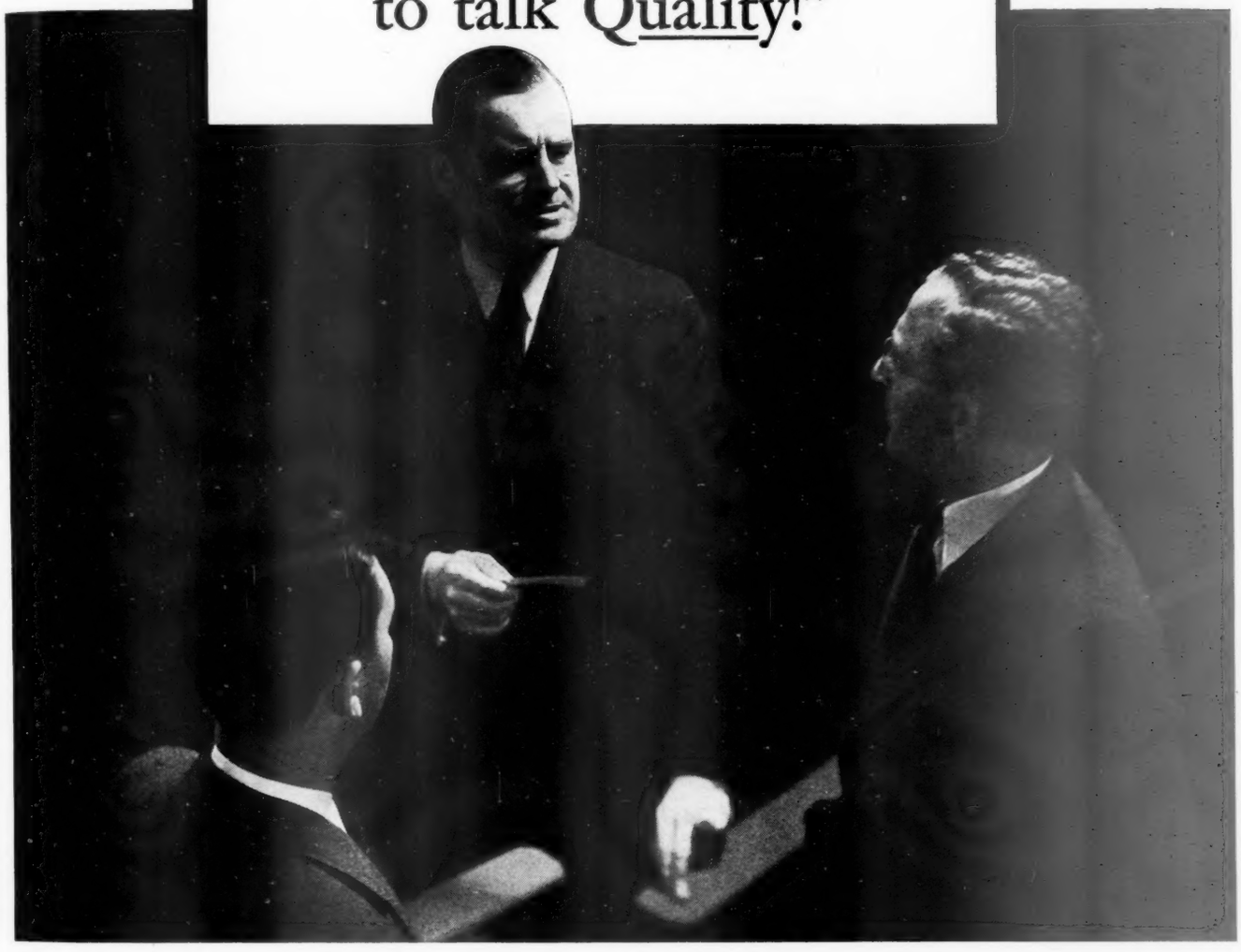

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GULF INDUSTRIAL LUBRICATION

Freight Operating Statistics of Large Steam Railways—Selected Items for the Month of July,

Region, road, and year		Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (*thousands*)	Car-miles: Per cent loaded	Ton-miles (*thousands*): Gross, excluding locomotives and tenders	Ton-miles (*thousands*): Net, revenue and non-revenue	Number of road locomotives on line: Serviceable: Not stored	Serviceable: Stored	Unserviceable	Per cent unserviceable
New England Region:													
Boston & Albany	1938	374	107,721	111,720	7,924	2,472	67.4	134,382	45,142	50	6	34	37.8
	1937	374	138,820	143,520	9,484	3,034	65.9	171,257	60,238	58	12	21	23.0
Boston & Maine	1938	1,937	224,532	247,452	20,008	7,881	71.4	422,914	156,051	104	3	133	55.4
	1937	1,941	269,871	298,859	23,375	9,433	71.1	500,697	185,098	123	10	123	48.0
N. Y., New Hav. & Hartf.	1938	1,997	290,789	367,965	19,169	9,843	64.4	543,466	190,152	150	20	99	32.7
	1937	2,011	351,402	427,852	23,786	12,102	68.0	640,038	234,508	190	2	73	28.3
Great Lakes Region:													
Delaware & Hudson	1938	830	185,400	238,413	21,113	5,966	66.1	358,551	163,927	84	137	47	17.5
	1937	830	219,154	283,150	30,354	7,479	66.9	446,661	209,224	91	132	43	16.2
Del., Lack. & Western	1938	983	287,055	322,524	43,811	9,903	67.9	571,206	217,459	117	18	85	38.6
	1937	984	356,306	393,213	50,984	11,773	69.2	663,894	256,312	119	20	83	37.4
Erie (incl. Chi. & Erie)	1938	2,276	559,935	594,525	33,900	24,437	65.0	1,492,815	527,555	205	50	216	45.9
	1937	2,277	709,793	747,980	36,923	30,534	65.8	1,854,863	694,950	236	27	202	43.4
Grand Trunk Western	1938	1,027	200,945	201,823	1,504	5,151	62.6	312,431	105,870	62	2	45	41.3
	1937	1,027	267,161	268,709	2,251	7,281	64.1	432,990	152,737	85	..	49	36.6
Lehigh Valley	1938	1,288	258,642	284,633	40,169	10,287	64.7	649,367	270,038	105	2	130	54.9
	1937	1,303	331,442	361,954	45,287	12,347	66.8	765,696	325,337	132	5	142	50.9
New York Central	1938	10,651	2,101,553	2,204,899	130,149	68,964	60.8	4,503,248	1,804,911	663	284	548	36.7
	1937	10,693	2,742,463	2,873,181	164,698	91,296	61.6	5,920,401	2,402,020	972	179	336	22.6
N. Y., Chicago & St. Louis	1938	1,672	434,645	440,003	5,181	15,270	62.2	930,819	330,031	136	27	35	17.7
	1937	1,672	496,782	504,801	6,759	17,580	65.4	1,054,647	404,228	171	7	17	8.7
Pere Marquette	1938	2,081	261,944	271,326	5,975	6,815	61.3	442,708	169,042	87	25	48	30.0
	1937	2,081	362,923	369,671	7,124	9,699	61.8	619,535	233,572	112	8	26	17.8
Pittsburgh & Lake Erie	1938	233	50,494	51,555	.....	2,062	59.5	176,839	97,125	24	8	39	54.9
	1937	234	95,089	97,552	.....	3,540	63.1	297,740	170,576	41	11	19	26.8
Wabash	1938	2,421	536,229	550,135	12,041	16,456	65.6	981,319	346,773	130	15	134	48.0
	1937	2,421	585,621	600,004	12,125	17,723	66.3	1,033,548	371,239	149	27	112	38.9
Central Eastern Region:													
Baltimore & Ohio	1938	6,314	1,217,898	1,482,725	158,532	38,236	62.0	2,611,670	1,142,332	549	171	550	43.3
	1937	6,330	1,576,307	1,912,364	194,936	48,903	63.7	3,318,689	1,513,804	720	79	472	37.1
Central of New Jersey	1938	679	135,030	154,973	28,701	4,259	60.2	298,918	139,189	67	5	77	51.7
	1937	681	153,027	170,630	32,473	4,763	62.1	314,943	144,455	79	11	64	41.6
Chicago & Eastern Illinois	1938	927	149,852	149,986	2,510	3,436	69.6	202,088	84,365	54	5	49	45.4
	1937	931	179,973	180,230	3,100	4,655	68.7	276,542	116,991	52	3	47	46.1
Elgin, Joliet & Eastern	1938	435	72,830	73,471	644	1,661	59.4	124,784	57,961	47	7	29	34.9
	1937	435	118,561	120,224	2,164	2,996	59.7	235,714	117,786	57	1	24	29.3
Long Island	1938	390	23,846	24,476	14,132	217	49.9	16,919	6,312	27	11	9	19.1
	1937	393	27,031	27,688	15,418	227	49.1	17,829	6,515	32	9	8	16.3
Pennsylvania System	1938	10,021	2,250,727	2,699,146	284,432	85,984	61.6	5,733,951	2,437,927	1,054	430	918	38.2
	1937	10,015	3,309,362	3,794,465	412,891	118,640	63.1	8,068,376	3,660,377	1,492	279	544	23.5
Reading	1938	1,444	315,580	350,213	44,118	9,021	60.3	645,185	299,503	178	35	141	39.8
	1937	1,445	422,999	462,618	52,328	11,693	62.0	831,042	390,629	194	27	110	33.2
Pocahontas Region:													
Chesapeake & Ohio	1938	3,050	718,265	747,966	31,447	31,820	56.7	2,657,062	1,448,351	321	80	128	24.2
	1937	3,050	850,793	889,767	38,537	38,896	56.7	3,283,968	1,788,053	401	44	108	19.5
Norfolk & Western	1938	2,178	551,191	568,236	25,092	22,374	58.8	1,795,720	931,939	261	72	37	10.0
	1937	2,180	703,564	747,267	36,340	29,830	59.2	2,449,168	1,306,539	330	23	15	4.1
Southern Region:													
Atlantic Coast Line	1938	5,079	457,183	461,277	6,775	9,112	64.1	523,555	185,122	244	42	92	24.3
	1937	5,117	561,544	564,317	7,699	12,099	63.0	679,965	252,301	233	54	89	23.7
Central of Georgia	1938	1,886	239,253	240,933	3,556	4,852	67.4	273,360	98,334	98	..	26	21.0
	1937	1,886	283,697	287,069	4,496	5,901	70.0	321,682	121,387	107	..	19	15.1
Illinois Central (incl. Y. & M. V.)	1938	6,540	1,200,735	1,206,441	21,412	32,356	62.9	2,050,088	827,112	601	34	224	26.1
	1937	6,547	1,482,368	1,502,099	27,935	37,739	64.7	2,337,553	950,645	642	54	162	18.9
Louisville & Nashville	1938	4,928	930,876	1,006,302	23,929	22,373	59.6	1,568,960	730,852	306	37	209	37.9
	1937	4,931	1,131,627	1,224,354	28,871	26,499	59.7	1,851,091	874,810	362	52	144	25.8
Seaboard Air Line	1938	4,305	428,480	434,616	3,809	10,355	65.4	599,559	227,855	212	34	60	19.6
	1937	4,295	491,842	511,828	2,952	12,037	67.9	671,995	257,495	214	36	62	19.9
Southern	1938	6,561	1,172,139	1,186,438	16,453	26,323	66.7	1,480,800	557,525	489	2	211	30.1
	1937	6,596	1,327,822	1,349,268	20,254	29,851	67.5	1,660,429	655,862	508	4	256	33.3
Northwestern Region:													
Chicago & North Western	1938	8,388	812,914	846,062	21,215	23,081	61.6	1,489,476	507,782	318	172	210	30.0
	1937	8,397	1,013,272	1,059,627	25,150	27,091	62.1	1,725,674	650,256	442	60	184	26.8
Chicago Great Western	1938	1,450	238,635	239,376	9,096	6,866	61.4	437,260	156,407	62	6	23	25.3
	1937	1,450	280,642	281,997	8,799	8,009	61.9	496,375	182,455	68	..	25	26.9
Chi., Milw., St. P. & Pac.	1938	10,943	1,202,626	1,245,863	55,235	33,200	61.3	2,163,106	857,306	473	70	151	21.8
	1937	11,105	1,362,887	1,467,102	67,064	37,602	61.9	2,402,635	964,087	551	27	93	13.9
Chi., St. P. Minneap. & Om.	1938	1,636	207,463	215,858	9,607	4,616	64.3	288,868	117,671	99	26	16	11.3
	1937	1,636	238,300	251,543	11,905	5,210	64.7	325,237	131,083	112	17	19	12.8
Great Northern	1938	7,976	671,979	663,543	23,425	22,604	63.9	1,544,606	652,886	310	58	172	31.9
	1937	7,997	841,595	837,167	29,410	29,869	58.3	2,157,024	1,007,448	330	57	161	29.4
Minneap., St. P. & S. St. M.	1938	4,273	346,898	351,163	3,172	7,594	64.2	443,290	169,874	111	..	37	25.0
	1937	4,278	419,074	428,265	6,562	9,682	64.3	591,815	249,862	125	..	24	16.1
Northern Pacific	1938	6,423	624,596	653,485	32,400	19,851	66.2	1,228,339	489,107	312	45	95	21.0
	1937	6,429	719,713	761,509	42,124	22,851	64.6	1,396,752	557,458	377	19	74	15.7
Central Western Region:													
Alton	1938	912	217,822	234,676	1,554	4,692	61.1	310,864	122,000	55	11	29	30.5
	1937	912	241,766	265,233	2,497	5,533	62.6	356,341	132,265	73	..	25	25.5
Atch., Top. & S. Fe (incl. G.C. & S.F. & P.&S.F.)	1938	13,500	1,945,823	2,118,793	94,705	54,474	59.9	3,696,261	1,249,598	617	24	307	32.4
	1937	13,562	2,209,003	2,405,181	100,079	62,687	59.5	4,206,095	1,453,878	682	6	258	27.3
Chicago, Burl. & Quincy	1938	8,893	1,109,149	1,146,702	44,963	32,056	63.9	2,071,825	864,287	410	61	85	15.3
	1937	8,934	1,264,441	1,313,649	49,447	36,126	62.5	2,222,655	956,878	451	12	81	14.9
Chi., Rock I. & Pac. (incl. Chi., Rock I. & Gulf)	1938	7,954	1,182,750	1,210,702	8,759	27,904	61.8	1,785,262	683,958	380	39	187	30.9
	1937	8,113	1,371,496	1,404,270	7,652	32,057	62.9	2,016,977	786,725	429	18	178	28.5
Denver & Rio Gr. Western	1938	2,563	226,020	246,009	23,830	6,181	68.0	393,583	156,544	133	29	38	19.0
	1937	2,576	309,185	338,862	35,678	7,636	67.9	485,501	207,458	166	9	27	13.4
Southern Pac.—Pac. Lines	1938	8,567	1,353,125	1,472,940	167,317	45,233	62.5	2,878,692	936,064	582	29	166	21.4
	1937	8,607	1,697,086	1,866,628	239,873	54,768	62.0	3,484,076	1,155,038	629	2	130	17.1
Union Pacific	1938	9,903	1,589,907	1,643,192	85,891	50,344	60.6	3,269,997	1,116,699	528	132	212	24.3
	1937	9,911	1,914,667	1,984,126	113,700	57,231	59.0	3,720,902	1,259,420	611	58	190	22.1
Southwestern Region:													
Mo.-Kansas-Texas Lines	1938	3,282	395,650	401,044	5,902	9,854	61.2	623,118	236,474	91	..	115	55.8
	1937	3,282	444,273	449,653	6,025	11,850	60.8	747,326	275,706	119	5	70	36.1
Missouri Pacific	1938	7,145	1,103,101	1,147,354	25,766	30,374	64.0	1,951,592	774,054	378	60	107	19.6
	1937	7,144	1,240,432	1,303,727	29,590	35,182	64.7	2,196,613	908,956	417	40	82	15.2
St. Louis-San Francisco	1938	4,845	687,433	694,161	9,792	13,917	60.8	901,489	360,076	246	63	78	20.2
	1937	4,888	843,155	852,782	12,587	17,572	60.8	1,138,687	466,566	294	36	77	18.9
St. Louis Southw. Lines	1938	1,690	224,521	226,935	3,132	6,357	65.0	372,575	138,213	63	38	23	18.5
	1937	1,690	327,210	329,407	4,486	8,103	63.8	480,668	170,100	91	9	22	18.0
Texas & New Orleans	1938	4,415	518,727	518,744	5,028	12,285	65.8	750,461	288,504	216	31	41	14.2
	1937	4,419	646,520	646,601	8,245	14,642	59.2	974,875	352,888	230	21	32	11.3
Texas & Pacific	1938	1,932	288,285	288,285	2,908	8,630	64.8	517,205	174,748	76	11	101	53.7
	1937	1,944	339,932	339,932	2,121	10,105	63.1	626,436	211,729	86	7	89	48.9

Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.

1938, Compared with July, 1937, for Roads with Annual Operating Revenues Above $25,000,000

Region, road, and year	Number of freight cars on line: Home	Foreign	Total	Per cent unserviceable	Gross ton-miles per train-hour, excluding locomotives and tenders	Gross ton-miles per train-mile, excluding locomotives and tenders	Net ton-miles per train-mile	Net ton-miles per loaded car-mile	Net ton-miles per car-day	Car-miles per car-day	Net ton-miles per mile of road per day	Pounds of coal per 1,000 gross ton-miles, including locomotives and tenders	Locomotive-miles per locomotive-day
New England Region:													
Boston & Albany	1938 932	3,545	4,477	2.8	20,712	1,260	423	18.3	337	27.4	3,894	155	45.6
	1937 2,198	3,841	6,039	26.0	20,951	1,246	438	19.9	309	23.6	5,196	159	57.8
Boston & Maine	1938 8,312	7,368	15,680	13.7	25,603	1,890	697	19.8	329	23.3	2,599	94	38.8
	1937 8,129	6,524	14,653	14.2	25,813	1,863	689	19.6	393	28.1	3,076	96	44.1
N. Y., New Hav. & Hartf.	1938 10,075	9,118	19,193	18.5	27,671	1,898	664	19.3	320	25.7	3,072	92	50.8
	1937 8,218	11,231	19,449	12.1	26,477	1,851	678	19.4	381	28.9	3,762	96	62.9
Great Lakes Region:													
Delaware & Hudson	1938 9,725	2,511	12,236	5.2	29,018	1,945	889	27.5	445	24.5	6,371	101	33.7
	1937 9,092	3,443	12,535	4.0	29,631	2,047	959	28.0	546	29.1	8,132	101	41.8
Del., Lack. & Western	1938 13,004	4,836	17,840	17.8	35,966	2,017	768	22.0	389	26.1	7,136	123	56.7
	1937 12,928	6,234	19,162	13.3	31,567	1,887	729	21.8	433	28.7	8,403	127	70.1
Erie (incl. Chi. & Erie)	1938 18,062	12,183	30,245	8.8	45,242	2,688	950	21.6	577	41.1	7,477	88	48.1
	1937 15,505	16,328	31,833	5.3	43,905	2,636	988	22.8	714	47.7	9,845	89	60.1
Grand Trunk Western	1938 5,479	4,246	9,725	19.3	32,818	1,562	529	20.6	353	27.4	3,325	88	66.0
	1937 4,676	7,067	11,743	17.8	32,042	1,635	577	21.0	417	31.0	4,797	88	71.5
Lehigh Valley	1938 11,437	8,190	19,627	9.9	45,439	2,535	1,054	26.3	436	25.6	6,763	103	47.4
	1937 10,749	9,426	20,175	9.1	40,515	2,340	994	26.3	517	29.3	8,054	107	50.5
New York Central	1938 100,361	56,922	157,283	23.0	36,886	2,161	866	26.2	373	23.4	5,466	94	57.2
	1937 89,526	69,295	158,821	14.5	37,153	2,183	886	26.3	484	29.9	7,246	94	74.6
N. Y., Chicago & St. Louis	1938 7,999	6,861	14,860	6.4	40,948	2,145	761	21.6	753	56.0	6,367	78	78.2
	1937 6,136	8,996	15,132	3.2	38,730	2,126	815	23.0	900	59.9	7,799	82	91.2
Pere Marquette	1938 11,167	4,749	15,916	5.0	28,272	1,691	646	24.8	347	22.8	2,620	84	61.6
	1937 7,595	6,807	14,402	5.0	27,846	1,714	646	24.1	511	34.4	3,621	82	90.7
Pittsburgh & Lake Erie	1938 9,132	8,714	17,846	35.2	49,383	3,508	1,927	47.1	177	6.3	13,447	77	25.1
	1937 8,434	10,686	19,120	30.3	46,399	3,152	1,806	48.2	292	9.6	23,515	83	46.9
Wabash	1938 15,910	8,138	24,048	8.4	36,758	1,851	654	21.1	479	34.6	4,620	102	67.0
	1937 13,227	9,236	22,463	6.1	35,759	1,782	640	20.9	560	40.3	4,946	104	71.8
Central Eastern Region:													
Baltimore & Ohio	1938 61,693	21,064	82,757	20.3	30,359	2,174	951	29.9	446	24.1	5,836	124	45.0
	1937 55,927	30,785	86,712	11.1	28,057	2,134	974	31.0	567	28.8	7,714	128	56.9
Central of New Jersey	1938 10,577	9,534	20,111	33.0	27,762	2,362	1,100	32.7	225	11.5	6,613	126	50.3
	1937 9,618	8,760	18,378	29.1	26,493	2,160	991	30.3	246	13.1	6,843	131	55.8
Chicago & Eastern Illinois	1938 3,443	2,536	5,979	9.8	25,600	1,352	564	24.6	453	26.5	2,936	120	48.1
	1937 2,953	3,414	6,367	6.4	28,204	1,540	651	25.1	590	34.2	4,054	112	61.3
Elgin, Joliet & Eastern	1938 8,617	2,335	10,952	6.5	16,872	1,754	815	34.9	170	8.2	4,298	106	39.7
	1937 8,660	6,728	15,388	3.7	18,505	2,025	1,012	39.3	258	11.0	8,735	101	67.5
Long Island	1938 371	2,566	2,937	4.1	5,198	725	271	29.1	66	4.5	522	301	36.1
	1937 396	2,499	2,895	3.5	5,137	681	249	28.7	68	4.8	535	348	40.9
Pennsylvania System	1938 208,787	50,103	258,890	17.9	38,377	2,589	1,101	28.4	307	17.6	7,848	102	45.0
	1937 181,470	71,161	252,631	16.4	35,876	2,486	1,128	30.9	470	24.1	11,790	108	65.7
Reading	1938 26,735	8,312	35,047	19.6	26,960	2,048	951	33.2	279	14.0	6,691	122	39.1
	1937 23,483	12,494	35,977	8.2	25,684	1,970	926	33.4	356	17.2	8,720	127	53.4
Pocahontas Region:													
Chesapeake & Ohio	1938 47,237	9,696	56,933	4.4	57,214	3,722	2,029	45.5	813	31.5	15,318	67	52.1
	1937 53,736	13,629	67,365	0.9	57,404	3,892	2,119	46.0	921	35.3	18,911	67	59.5
Norfolk & Western	1938 39,315	4,320	43,635	2.2	50,323	3,290	1,707	41.7	676	27.6	13,803	92	56.5
	1937 31,940	5,262	37,202	1.5	52,954	3,523	1,879	43.8	1,081	41.6	19,333	90	74.5
Southern Region:													
Atlantic Coast Line	1938 17,151	4,664	21,815	24.8	20,304	1,147	406	20.3	279	21.4	1,176	113	42.5
	1937 14,534	6,952	21,486	24.2	21,755	1,213	450	20.9	362	27.6	1,591	105	52.6
Central of Georgia	1938 5,024	2,278	7,302	1.4	22,022	1,150	414	20.3	366	26.8	1,682	114	69.2
	1937 3,548	4,071	7,619	2.2	21,517	1,143	431	20.6	495	34.5	2,076	120	80.1
Illinois Central (incl. Y. & M. V.)	1938 35,472	14,985	50,457	16.1	28,566	1,716	692	25.6	538	33.5	4,080	117	49.6
	1937 28,933	20,311	49,244	14.3	26,670	1,588	646	25.2	624	38.3	4,684	117	61.8
Louisville & Nashville	1938 39,162	8,362	47,524	19.0	26,869	1,688	786	32.7	487	25.0	4,784	114	63.5
	1937 34,245	10,040	44,285	12.7	25,483	1,639	774	33.0	649	32.9	5,723	116	77.3
Seaboard Air Line	1938 11,055	3,565	14,620	3.6	23,596	1,418	539	22.0	495	34.4	1,707	115	51.3
	1937 9,403	5,919	15,322	2.0	22,916	1,394	534	21.4	551	37.9	1,934	119	59.2
Southern	1938 21,030	15,518	36,548	11.7	22,418	1,272	479	21.2	492	34.8	2,741	133	56.4
	1937 19,842	18,660	38,502	12.0	21,937	1,258	497	22.0	539	36.3	3,208	136	60.5
Northwestern Region:													
Chicago & North Western	1938 40,811	19,851	60,662	9.2	29,599	1,895	646	22.0	277	20.4	1,953	102	43.8
	1937 36,575	25,204	61,779	8.0	26,269	1,751	660	24.0	361	24.2	2,498	107	57.4
Chicago Great Western	1938 2,613	3,478	6,091	3.0	33,181	1,840	658	22.8	867	62.0	3,480	111	95.1
	1937 1,973	4,456	6,428	2.3	32,536	1,771	651	22.8	959	68.0	4,059	117	105.9
Chi., Milw., St. P. & Pac.	1938 47,308	16,785	64,093	3.0	29,034	1,810	717	25.8	435	27.5	2,527	106	65.7
	1937 42,733	22,033	64,766	3.0	28,124	1,774	712	25.6	489	30.9	2,801	110	80.6
Chi., St. P. Minneap. & Om.	1938 3,914	5,519	9,433	9.3	19,091	1,415	576	25.5	411	25.1	2,320	99	55.8
	1937 3,666	5,908	9,574	8.2	18,672	1,395	562	25.2	465	28.5	2,585	101	62.3
Great Northern	1938 36,549	11,250	47,799	7.8	34,539	2,311	977	28.9	453	24.5	2,641	103	45.4
	1937 36,458	12,254	48,712	7.4	39,164	2,583	1,206	33.7	686	34.8	4,064	92	56.0
Minneap., St. P. & S. St. M.	1938 13,394	3,806	17,200	7.5	21,559	1,280	491	22.4	334	23.2	1,282	93	80.1
	1937 11,896	5,292	17,188	3.8	22,190	1,421	600	25.8	466	28.1	1,884	90	95.0
Northern Pacific	1938 29,677	5,957	35,634	11.8	31,222	1,979	788	24.6	444	27.2	2,456	130	53.4
	1937 25,797	5,963	31,760	8.3	30,293	1,950	778	24.4	566	35.9	2,797	130	60.3
Central Western Region:													
Alton	1938 1,712	7,285	8,997	7.7	34,138	1,449	569	26.0	477	30.0	4,315	105	83.4
	1937 2,337	6,572	8,909	17.7	34,139	1,489	553	23.9	485	32.4	4,678	112	92.6
Atch., Top. & S. Fe (incl. G.C. & S.F. & P.&S.F.)	1938 76,415	12,196	88,611	10.3	35,829	1,908	645	22.9	445	32.4	2,986	108	80.0
	1937 67,118	18,347	85,465	7.7	34,709	1,913	661	23.2	550	39.8	3,458	110	91.0
Chicago, Burl. & Quincy	1938 30,392	14,676	45,068	9.4	30,469	1,878	783	27.0	612	35.5	3,135	100	74.5
	1937 26,619	22,176	48,795	5.1	28,678	1,766	760	26.5	653	39.4	3,455	105	87.6
Chi., Rock I. & Pac. (incl. Chi., Rock I. & Gulf)	1938 23,054	12,151	35,205	5.5	27,446	1,516	581	24.5	596	39.4	2,774	114	68.6
	1937 20,874	14,281	35,155	5.8	26,452	1,476	576	24.5	692	44.9	3,128	112	76.9
Denver & Rio Gr. Western	1938 13,044	4,510	17,554	3.5	28,902	1,748	695	25.3	303	17.6	1,970	146	46.5
	1937 11,649	4,990	16,639	5.0	25,275	1,576	673	27.2	426	23.1	2,598	147	64.0
Southern Pac.—Pac. Lines	1938 33,654	27,804	61,458	7.2	35,958	2,142	697	20.7	479	37.0	3,525	97	73.0
	1937 32,939	32,112	65,051	5.9	32,610	2,068	686	21.1	562	42.9	4,329	100	92.5
Union Pacific	1938 42,282	18,037	60,319	11.9	42,749	2,069	707	22.2	603	44.9	3,638	108	67.0
	1937 40,239	24,647	64,886	10.3	39,476	1,962	664	22.0	669	51.5	4,099	113	82.6
Southwestern Region:													
Mo. Kansas-Texas Lines	1938 5,949	3,324	9,273	4.7	29,739	1,581	600	24.0	760	51.8	2,324	81	68.0
	1937 4,305	6,309	10,614	1.6	20,624	1,687	622	23.3	802	56.7	2,710	80	79.8
Missouri Pacific	1938 17,984	16,038	34,022	2.4	30,512	1,779	705	25.5	720	44.1	3,495	111	75.1
	1937 16,142	23,222	39,364	2.6	29,271	1,784	738	25.8	710	42.5	4,104	112	86.4
St. Louis-San Francisco	1938 18,638	4,432	23,070	5.8	25,922	1,318	526	25.9	497	31.5	2,397	117	61.8
	1937 16,299	5,910	22,209	6.8	26,005	1,361	558	26.6	635	39.4	3,079	121	72.8
St. Louis Southw. Lines	1938 2,623	2,609	5,232	3.7	31,738	1,661	616	21.7	875	61.9	2,638	85	63.9
	1937 2,323	3,496	5,819	3.1	28,157	1,471	521	21.0	911	68.0	3,247	93	94.5
Texas & New Orleans	1938 7,018	8,783	15,801	4.3	27,926	1,456	560	23.5	570	36.9	2,108	86	62.9
	1937 6,897	11,405	18,302	6.4	28,380	1,519	550	24.1	593	41.6	2,576	84	78.1
Texas & Pacific	1938 3,469	3,847	7,316	2.0	34,977	1,796	607	20.2	752	57.3	2,918	79	53.6
	1937 2,687	5,059	7,746	2.8	34,121	1,844	623	21.0	829	62.8	3,513	76	61.8

Railway Age Book Guide

Here is a handy reference booklet on railroad books that are of interest to readers of "Railway Age." In it are described practically all of the books published during the past decade that are in print. They are classified under subject headings and arranged in chronological order. A title index in the back facilitates quick reference.

SUBJECT INDEX

Accounting — Administration — Consolidation — Co-ordination — Economics — Finance — General — History — Law — Officers — Personnel — Rates — Regulation — Statistics — Traffic Management — Valuation.

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STATEMENT of the ownership, management, circulation, etc., required by the Acts of Congress of August 24, 1912, and March 3, 1933, of *Railway Age, published weekly at Philadelphia, Pa., for October 1, 1938:*

State of New York } ss.
County of New York }

Before me, a *Notary Public* in and for the State and county aforesaid, personally appeared *Roy V. Wright*, who, having been duly sworn according to law, deposes and says that he is the *Managing Editor* of the *Railway Age* and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:
Publisher, Simmons-Boardman Publishing Corporation, 30 Church Street, New York, N. Y.
Editor, S. O. Dunn, 105 West Adams Street, Chicago, Ill.
Managing Editor, Roy V. Wright, 30 Church Street, New York, N. Y.

Business Managers, None.

2. That the owners are: Simmons-Boardman Publishing Corporation, 30 Church Street, New York, N. Y.; Stockholders of 1 per cent or more of the total amount of stock are: I. R. Kerfoot, 15 Hillcrest Dr., Pelham Manor, N. Y.; P. A. Lee, Hopatcong, N. J.; Henry Lee, Hopatcong, N. J.; E. G. Wright, 398 N. Walnut Street, E. Orange, N. J.; S. O. Dunn, 105 West Adams Street, Chicago, Ill.; C. E. Dunn, 3500 Sheridan Blvd., Chicago, Ill.; L. B. Sherman, 375 Sheridan Road, Winnetka, Ill.; Mae E. Howson, 105 West Adams Street, Chicago, Ill.; B. L. Johnson, 6949 Bennett Avenue, Chicago, Ill.; The Chase National Bank of the City of New York and Prudence Whitney Mallory, as Trustees under the last will and testament of Robert Mallory, Jr., deceased; Spencer Trask & Company, 25 Broad Street, New York, N. Y. General partners of Spencer Trask & Company are: Edwin M. Bulkley, Walnut Street, Englewood, N. J.; Acosta Nichols, Cold Spring Road, Oyster Bay, N. Y.; Cecil Barret, Carlyle Hotel, New York, N. Y.; C. Everett Bacon, 16 Erwin Park, Montclair, N. J.; F. Malbone Blodget, 65 Patterson Ave., Greenwich, Conn.; Arthur H. Gilbert, 440 Park Ave., New York, N. Y.; Henry S. Allen, 407 Highland Ave., Orange, N. J.; William R. Basset, Old Church Road, Greenwich, Conn.; William Kurt Beckers, South Salem Road, Poundridge, N. Y.; Reginald C. Foster, 484 Charles River St., Needham, Mass.; Edwin M. Bulkley, Jr., 21 Sturgis Road, Bronxville, N. Y.; S. Bayard Colgate, Center Street, Orange, N. J., Limited Partner; Henry A. Colgate, New Vernon, N. J., Limited Partner.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: *None.*

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

ROY V. WRIGHT.

Sworn to and subscribed before me this 26th day of September, 1938.

[Seal] H. D. NELSON.

(My commission expires March 30, 1939.)